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EAGLE - PICHER
THE EAGLE-PICHER COMPANY

Mining & Smelting Division
First National Bank Bldg
Miami, Oklahoma

September 17, 1954

Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Attention: Mr. C. O. Mittendorf

re: Docket No. DMEA-2399
(Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Ore Body
Lafayette County, Wisconsin
Contract No. Idm-E339

Dear Mr. Mittendorf:

We are in receipt of your letter of September 7 with Certification enclosed with reference to the above matter. In the last line of your letter you request that if production ceases at any time for an extended period, we notify Mr. Needham at six months' intervals during such period.

The Calvert-Ralph ore body is a marginal one, and we have not, as yet, developed or had any production on the property, and, so far as I know, we do not have any immediate plans for the same.

We will notify Mr. Needham if and when we commence production upon the property unless your department desires that we give Mr. Needham notice at six month's intervals of the continuing status of the property.

Yours truly,

s/ Corbin Shouse
Corbin Shouse
Legal Department

/mel

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Calfax Avenue South
Minneapolis 8, Minnesota

August 9, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket 2399, Contract E-339, Eagle-Picher Company

Reference is made to your letter of August 4, 1954, regarding certification of the subject project.

Our interpretation of the contract, the guaranty, and the statements in the Field Team's final report about discoveries on the four properties results in our advice that certification can include the four properties, namely: W. H. Calvert Estate; Francis M. Calvert; Clarence Ralph, and the Fred W. and J. Frank Wilkinson.

This advice is based on the fact that when Eagle-Picher Company requested permission, on March 30, 1953, to surrender twelve leases involved in the contract, we felt that the preliminary pattern drilling under the terms of the contract had been satisfied, and if they did not pursue the drilling further there would not be mutual agreement. We referred the matter to you and your letter of April 27, 1953 advised the Government would so consent to the surrender. We then advised the operator on May 5, 1953. Nothing was said, however, as to relief from royalty payments if mineralization was certified. Only permission to surrender leases was given. (As a matter of fact, leases have been surrendered and later again picked up in many cases of mining or exploration in the area; in fact, even by Eagle-Picher, so we are informed)

On May 7, 1953, the company requested permission to surrender five more leases. The matter was referred to our Platteville team representatives who, although they indicated there might be possibilities of mineralization on those leases, were of the opinion the pattern drilling terms of the contract had been satisfied and it would not be mutual agreement if the company did not want to pursue further work, and also of the opinion these leases could be surrendered as well as were the first twelve. Approval was granted by this office on May 20, 1953, but again no mention was made of relief from royalty payment if mineralization was certified. Copies of all correspondence pertaining to the 17 leases are enclosed.

Owner's Consents to Lien were not obtained by the operator for this project and the guaranty in lieu thereof states that the operator "guarantees the payment to the United States of America of royalties, as specified in Article 6 of said contract, upon any and all ore discovered or developed as a result of said contract, which is mined within 10 years from the date of said contract, by the operator or its successor in interest; Provided, That in the event the operator, without consideration, surrenders and terminates its leasehold interests in all of the tracts included in the description in Article 2 of the contract form, and terminates all of its mining operations in said property, then and in that event all liability of the operator under this contract shall cease."

Our interpretation of that guaranty is that unless the operator gives up all of his leases and terminates all of his operations, he is still liable for payment of production royalties on any ore produced, regardless of whether he gives up a few of his leases or not. In this case the operator has not given up all of his leases, but rather has retained the Francis Calvert and the Clarence Ralph.

We feel certification can be made and all four properties cited.

A. B. MEEDHAM

Attachments

cc Dutton
Stehlik
Broughton

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Air Mail

August 4, 1954

Mr. A. B. Needham, Executive Officer
DMEA Field Team, Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Re: Docket No. DMEA-2399 (Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Orebody
Lafayette County, Wisconsin
Contract No. Idm-E339

Dear Mr. Needham:

Referring to the Field Team's final geological-engineering report by W. A. Grosh and W. A. Broughton, it is stated on page 4:

"Work performed under the contract indicated or discovered ore on four properties, the Wm. H. Calvert Estate, Francis M. Calvert, Clarence Ralph and the Fred W. and J. Frank Wilkinson. Under favorable economic conditions, extraction of developed ore on the Francis Calvert and Clarence Ralph properties could be expected. Additional exploratory work on the other discoveries could develop commercial ore bodies."

Yet in the previous paragraph they state:

"On March 30, 1953 the government was notified by letter that the company had surrendered 12 of the leases in the contract. By a letter dated May 7, 1953, the company notified the government of the surrender of 5 additional leases. This left only two leases in the contract, the Francis M. Calvert and the Clarence P. Ralph, both in Section 6, Township 1 North, Range 1 East."

Therefore, we are at a loss as to how to make the certification. Obviously, all of the four cited properties should be included, if it is possible to do so.

On April 6, 1953, you wrote us regarding the surrender of 12 leases by this Operator. On April 27, we wrote you consenting to such relinquishment. We have no knowledge as to any further surrendering of leases under this contract. A letter written by you to the Operator, dated May 20, refers to a letter from it dated May 7, of which we have no copy.

Please forward us a copy of the May 7 letter and, if approval was granted by your office for the relinquishment of lands other than the 12 leases covered in our April 27 letter, kindly give full justification for such action.

Please cover this matter as soon as possible, since we have only a short time remaining in which to make certification.

Sincerely yours,

/s/ George C. Selfridge
Chairman, Operating Committee

APPROVED:

/s/ J. H. Hedges
Member, Bureau of Mines

/s/ Philip W. Guild
Member, Geological Survey

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Mr. O. A. Rockwell
The Eagle-Picher Company
Mining & Smelting Division
First National Bank Building
Miami, Oklahoma

Re: Docket No. DMEA-2399 (Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Orebody
Lafayette County, Wisconsin
Contract No. Idm-E339

Dear Mr. Rockwell:

Transmitted herewith is a certification of discovery or development related to the Exploration Project Contract No. Idm-E339, dated June 11, 1952, on the lands described in the contract.

By the terms of the Exploration Project Contract and of the Certification, all production from the land described in the contract after June 11, 1952, the date of the contract, is subject to the Government's percentage royalty as set forth in the said contract until the sum of $33,978.88 which the Government has advanced as its participating interest is repaid, or until June 11, 1962, whichever occurs first.

Payments should be made to Mr. A. B. Needham, Executive Officer, DMEA Field Team, Region V, 2908 Colfax Avenue South, Minneapolis 8, Minnesota. Checks should be drawn in favor of the Defense Minerals Exploration Administration. The purchaser should be advised to deduct royalties from the amount due on each shipment and forward the checks to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Needham of any changes in ownership or production rights that might affect the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period pleast notify Mr. Needham at six-month intervals that such is the case.

Sincerely yours,

C. O. Mittendorf
Administrator

Enclosure

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Mr. O. A. Rockwell
The Eagle-Picher Company
Mining & Smelting Division
First National Bank Building
Miami, Oklahoma

Pursuant to the provisions of Exploration Project Contract No. Idm-E339, dated June 11, 1952, Docket No. DMEA-2399, hereinafter called the "contract", between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows: Churn drilling on the Francis M. Calvert and Clarence P. Ralph leases, located in the SE1/4 of Section 6, T. 1 North, R 1 East, of the 4th P.M., Lafayette County, Wisconsin, has shown the existence of zinc ores, with auxiliary amounts of lead, occurring as replacements within a series of dolomitic rocks.

Lesser amounts of zinc ores were also encountered by churn drilling on the Wm. H. Calvert Estate lease, located in the NE1/4 of Section 7, T. 1 North, R 1 East; and on the Fred W. and J. Frank Wilkinson lease, located in the S1/2 of the SW1/4 of Section 32, T. 2 North, R 1 East.

Dated: September 3, 1954

THE UNITED STATES OF AMERICA

By /s/ C. O. Mittendorf
Administrator, Defense Minerals
Exploration Administration

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

September 7, 1954

Mr. Irving Gumbel, Acting Director
Materials Division
Emergency Procurement Service
General Services Administration
Washington 25, D. C.

Re: Docket No. DMEA-2399 (Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Orebody
Lafayette County, Wisconsin
Contract No. Idm-E339

My dear Mr. Gumbel:

Enclosed is a copy of a certification of discovery or development related to Exploration Project Contract No. Idm-E339.

The contract was dated June 11, 1952, with the Government participating to the extent of 50 percent in an exploration project estimated to cost $191,230.78. Actual expenditures were $67,957.76, with the Government's share being half of such amount, or $33,978.88.

The total amount of work provided for under the contract consisted of 110,658 feet of churn drilling. Work actually done totalled 35,278 feet of churn drilling, after which the contract was terminated by mutual agreement.

The discovery is reported to consist of 408,506 tons of ore with a grade of 4.98 percent zine, occurring as replacements within dolomitic rocks.

Sincerely yours,

C. O. Mittendorf
Administrator

Enclosure

EAGLE-PICHER

THE EAGLE-PICHER COMPANY

ZINC AND ZINC PRODUCTS · LEAD AND LEAD PRODUCTS · HOME AND INDUSTRIAL INSULATIONS

MINING & SMELTING DIVISION
ILLINOIS OPERATIONS
P. O. BOX 1040
GALENA, ILLINOIS
Apr. 30, 1954

Mr. W. A. Broughton
U. S. Geological Survey
Platteville, Wis.

Dear Mr. Broughton:

In reply to your letter of April 29th regarding the release to us of Vinegar Hill's information from their drilling on F. M. Calvert and Clarence Ralph properties in Sec. 6, T-1-N, R-1-E, I will state that we obtained a release covering the Calvert lease, but not the C. Ralph lease. Possibly they would have granted a release on C. Ralph also if I had been more ~~spe~~ specific in my request, but I did not mention C. Ralph's name so they did not include it in their release.

Sincerely yours,
H. W. Davis
H. W. Davis, Resident Geologist.

Called by Tandy
10:15 A.M. 5-4-54 Spink

Platteville, Wisconsin

April 29, 1954

Mr. Harold Davis
Resident Geologist
The Eagle-Picher Company
P. O. Box 1040
Galena, Illinois

Dear Harold:

Has Vinegar Hill released to Eagle-Picher their drilling data in the vicinity of the North Star and only Wann mines on the F. Calvert and C. Ralph leases in sec. 6, T. 1 N., R. 1 E.?

This information is necessary in order for me to decide whether or not it is proper to use Vinegar Hill's data in conjunction with Eagle-Picher's recent drilling for the final report.

Sincerely,

W. A. Broughton

WAB:mcw

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

April 26, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA 2399, Contract Idm E-339 - The Eagle-Picher Co.

Here are the Government, Docket and Division copies of a properly executed termination agreement on the subject project.

The Regional Finance copy has been transmitted to them and copies have been retained by the Field Team and the operator.

A. B. NEEDHAM

Attachments

cc Dutton
Broughton
Hill

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

April 14, 1954

Mr. Corbin Shouse
First National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

Here are six copies of a termination agreement in connection with the completion of your Defense Minerals Exploration project, contract No. E-339, signed by the Administrator for the Government.

It is noted that Mr. Elmer Isern signed the original DMEA contract, but we understand that he has now been retired, and we learn that Mr. O. A. Rockwell is now in the same capacity. If that is correct, it would be appreciated if you would have him sign the termination agreement. Please retain the copy marked for you and return the original and other copies to this office for further distribution.

You will note that the third paragraph has to do with the final accounting of the units of work performed. Since the last monthly operator's report is in process of audit prior to payment, that should constitute the final accounting and, of course, we have already received from Mr. Lyden the final engineering report so the execution of this termination agreement will complete the project.

Very truly yours,

A. B. NEEDHAM
Executive Officer
Field Team
Region V

Enclosures

cc Dutton
Broughton
Grosh

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

April 6, 1954

Memorandum

To: L. A. Hill, Special Assistant to the Regional Director, Region V

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA 2399, Contract Z-339, Eagle-Picher Co.

Reference is made to your memorandum of April 2, 1954.

Here are the original and one copy of Report of Review covering the subject project which has been completed as of March 8, 1954.

Since the terms of the contract have been satisfied, the completion has been accepted by this office.

Certificates of discovery are issued by the Administrator on the basis of the Field Team final report or other data sufficient to permit the Administrator to issue the certification, and can be done anytime within six months of the completion date of the project. (Refer to DMEA Circular 26 and Supplements 1 and 2) This office does not issue certification of discovery notices.

Copies of correspondence pertinent to this project are attached.

Please furnish this office with the date voucher payment is consummated so we can comply with the Contract Administration and Audit Division request.

A. B. NEWNHAM

Attachments

cc Opr. Comm., Washington
Dutton
Grosh
Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

C
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April 1, 1954

Mr. A. B. Needham
Executive Officer
DMEA Field Team, Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

Re: Docket No. DMEA-2399 (Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Orebody
Lafayette County, Wisconsin
Contract No. Idm-E339

Dear Mr. Needham:

This is in reply to your memorandum of March 23, 1954, regarding the cited contract. March 8, 1954, according to the terms of the contract, can be accepted as the date which governs the six-month period for certification of this property. But, in order that the property may be certified within this period, we will need a final Field Team report within three or four months from the time the Operator's final report was received.

If this is not possible we would appreciate receiving from you, at your earliest convenience, a brief summary of the work done with a statement of the ore reserves. We could then proceed to certify this project.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

APPROVED:

J. H. Hedges
Member, Bureau of Mines

D. M. Larrabee
Member, Geological Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

March 23, 1954

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket 2399, Contract E-339, Eagle-Picher Company

Here are the original and two copies of the operator's final engineering and geological report on the subject project, the drilling program having been completed.

You will note that ore has been disclosed, and that when the Government report is written and transmitted, it will recommend certification. Following is the accounting information on this project:

Total amount of contract	$191,230.78
Government share	95,615.39
Total amount spent	67,957.76
Government share	33,978.88
Amount available to General Fund	61,636.51

Drilling on the project was completed February 4, 1954. The operator's report was received on March 8, 1954, and we would appreciate having March 8, 1954 as the date which will govern the six-month period before our report can be transmitted to you because of the complicated nature of the report and its length.

A. B. WEEKHAM

Attachments

cc Dutton
Grosh
Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2908 Calfax Avenue South
Minneapolis 8, Minnesota

March 18, 1954

Memorandum

To: L. A. Hill, Special Assistant to the Regional Director, Region V

From: Executive Officer, Field Team, Region V

Subject: Docket 2399, Contract Idm-E-339, Eagle-Picher Co.

Here are the original and four copies of the February 1954 Operator's Monthly Report and Voucher.

The terms of the contract as to required pattern drilling have been satisfied and the operator has transmitted his final engineering and geological report estimating ore reserves disclosed which will result in certification of the project for repayment of loan.

Drilling was finished on February 4, 1954. The operator's final report was received on March 8, 1954, so we are using March 8 as official completion date in order to permit us more time to write the Government's report before the deadline for certification.

This is the last voucher.

A. B. NEEDHAM

Attachments

cc Grosh
Dutton
Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

November 5, 1953

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Washington, D. C.

From: Executive Officer, Field Team, Region V

Subject: Operator's Monthly Report and Voucher for the month of September 1953, Docket DMEA-2399, Contract Idm-E-339, The Eagle-Picher Co., Galena, Illinois

Attached are two copies of the subject report for the month of September 1953, as processed for payment, for your files.

A. B. NEEDHAM

Attachments

cc Dutton
Broughton
Grosh

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2906 Calfax Avenue South
Minneapolis 8, Minnesota

May 20, 1953

Mr. Corbin Shouse
The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

Reference is made to your requests of April 7, 1953 and May 7, 1953, for approval of surrendering certain leases pertinent to your DMEA contract Idm 8-339.

Such approval is granted. We agree with your notation that the Francis M. Calvert and the Clarence P. Ralph properties, numbered 1 and 2 respectively in area 2, are still active and being held.

Very truly yours,

A. B. Needham
Executive Officer, Field Team
Region V

Copies to:
C. E. Dutton
Operating Committee (2)
Grosh
Broughton
files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 6, Minnesota

May 12, 1953

Memorandum

To: W. A. Grosh, U. S. Bureau of Mines, Platteville, Wis.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2399, Contract Idm E-339, Eagle-Picher Co.

Reference is made to a letter from Corbin Shouse, Legal Department, Eagle-Picher Co., under date of May 7, 1953, a copy of which was sent to you relative to surrendered leases.

You have copies of correspondence pertinent to the first group of leases so treated.

Please advise if there were any discoveries on the five leases in question by the letter of May 7, 1953, so we can advise Eagle-Picher either way.

A. S. Needham
Executive Officer, Field Team
Region V

CC - C. E. Dutton
W. A. Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

May 5, 1953

Mr. Corbin Shouse
The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

Reference is made to your letters of March 30, 1953 and April 7, 1953, advising us of the leases which you have surrendered and which also pertain to your DMEA contract X-399, Docket-2399.

As I advised you over the telephone shortly before you submitted these letters, I was fairly sure that such a procedure would be approved but that I would submit the matter to Washington for decision.

I am now in receipt of a letter which advises that although your company, as operator, agreed in Article 2 of the contract form to devote the land for the purposes of the project, and in accordance with the terms of Article 7 thereof, the Operator may not abandon any land essential to the project although he may, without breaching the contract, completely abandon all of it. Consequently, when the Operator proposes to abandon only part of the land on which project work is being conducted, to avoid claim of breach of contract the operator must obtain the Government's consent to the abandonment.

In this case, there appears to be no possibility of production from the land covered by the surrendered leases, therefore, this is to render official notice that the Government consents to their surrender.

Very truly yours,

A. B. Needham
Executive Officer, Field Team
Region V

cc - Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

January 15, 1953

Mr. A. G. Tompkins, Accountant
Eagle Picher Company
P. O. Box 404
Galena, Illinois

Dear Mr. Tompkins:

Reference is made to your letter of January 13, 1953, relative to payment of Check # 23080886 in the amount of $2,379.21, pertinent to your Defense Minerals Exploration Contract Idm-E-339.

We are in agreement with your statement that the $85.00 claimed for plugging 17 drill holes was omitted because our Platteville office was of the opinion an amendment increasing the cost per foot to $1.715 was to be approved, and so calculated it. When the voucher was audited in Minneapolis the $85.00 was inadvertently overlooked in re-calculating the footage at $1.50, so you do have due you $42.50 (50% of the $85.00). You can make the claim for $85.00 on your next voucher.

Amendment No. 1 provides footage at $1.565 from the beginning of the original contract; therefore, on the next voucher, you can also claim 9,869 feet of hole at $0.065. Future vouchers will be paid at the new rate of $1.565 per foot of drilling instead of $1.50.

Very truly yours,

A. B. Needham
Executive Officer
Field Team, Region V

cc - Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 6, Minnesota

December 22, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2399, Contract Idm-5339
Eagle-Picher Co. - Amendment No. 1

Reference is made to your letter of November 12, 1952, regarding the subject docket.

Here is the original and two copies of the amendment.

One copy was retained by the company, one by this office, and one copy is being transmitted to the Regional Finance Officer.

A.B. Needham
Executive Officer
Field Team, Region V

Attachments

ABNeedham:vb
cc Dutton
Grosh
Broughton
Region V
files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

December 15, 1952

Mr. Corbin Shouse
Eagle-Picher Company
1st National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

On November 18, 1952, there was sent you six copies of an amendment to your Defense Minerals Exploration Contract Idm-X339 for approval and proper execution, together with an explanation regarding the amendment.

May we have the executed amendment in order to further process it and complete some pending monthly operator's cost vouchers?

Sincerely yours,

A. B. Needham
Executive Officer
Field Team, Region V

ABNeedham:dg
cc Dutton
Fresh
Broughton
Region V
files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

November 18, 1952

Mr. Corbin Shouse
Eagle-Picher Company
1st National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

Pursuant to your request of August 22, 1952, to amend your Defense Minerals Exploration Contract Idm-E339 to increase the cost per foot of churn drilling by $0.23, we submitted for approval such an amendment but it was disapproved.

This office rewrote the amendment on October 17, 1952, in view of our interpretation of a letter from Washington which we thought gave us authority to increase the cost by the amount you requested excepting the $0.015 per foot of drilling for the geologists transportation. We rewrote the amendment for $1.715 per foot. This office telephoned you about it at the time.

Now, according to a letter from Washington, a copy of which we are enclosing, the second attempt to amend the contract to include the increase of labor costs has failed and all the increase permitted is $0.065; and, accordingly, the Washington office has written the amendment as such. The letter explains the reason.

In accordance with instructions, there are enclosed six copies of the amendment which, if it meets with company approval, should be signed, one copy retained by you, and the original and four copies returned to this office for further distribution.

We are sorry about the confusion connected with this amendment.

ABNeedham:dg
cc Dutton
Grosh
Broughton
Region V
files
df

Sincerely yours,

A. B. Needham
Executive Officer
Field Team, Region V

Enclosures

COPY

Broughton

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 12, 1952

Mr. A. B. Needham, Executive Officer
DMEA Field Team, Region V
2908 Colfax Avenue South
Minneapolis, Minnesota

Re: Docket No. DMEA-2399
Eagle-Picher Company
Contract No. Idm-E339

Dear Mr. Needham:

Reference is made to your letter of October 17, 1952, to the Operating Committee in which you again submit an amendment to the subject contract, increasing the unit price of churn drilling from $1.50 to $1.715 per foot. As we advised you in our letter of October 7, 1952, the only increase authorized is that of $.065 per foot to cover the costs of surveying and assaying not provided for in the original contract. We also advised that under the short-form contract, if no additional work is to be performed, the agreed unit cost may not be increased by amendment even though the operator's labor costs have increased.

From our telephone discussion on October 16, 1952, I understood that some new work at the increased cost was to be included in the proposed amendment. However, the proposal you submitted did not add to the work to be done under the original contract. Consequently, we are unable to approve the added cost of $0.15 per foot of churn drilling for increased labor costs. After our short-form contract is executed, the Government is no longer interested in the Operator's actual costs of performing the work, and in the absence of some new legal consideration flowing to the Government, the unit price, once fixed, becomes and remains the allowable cost of the work.

I am enclosing duly signed an amendment increasing the unit price of churn drilling to $1.565 per foot.

Sincerely yours,

(signed) Frank E. Johnson

Chairman, Operating Committee

Enclosures - 6

APPROVED:

J. H. Hedges
Member, Bureau of Mines

(signed) A. R. Kinkel, Jr.
Member, Geological Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

October 17, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2399, Contract Idm-K339
Eagle-Picher Company

Reference is made to your letter of October 7, 1952, advising that Amendment No. 1, which was submitted to you on September 8, 1952, was not authorized and returning your copies of said amendment for rewrite.

Here are 7 copies of the Amendment No. 1 rewritten so as to permit an increase in drilling costs from $1.50 to $1.715 per foot.

The increase of from $1.50 to $1.65 in the prevailing rate for churn drilling in the area is justified because since the contract was drawn all costs for drilling in the area have risen. This is a condition that is not foreseeable.

Surveying and assaying costs of $0.04 and $0.025, respectively, per foot of drilling was not provided for in the original contract and are regular and proper because such have to be done to evaluate results. Apparently these items were inadvertently overlooked when the contract was drawn. Your letter of October 7 indicated they were proper additions.

The $0.015 per foot of drilling to compensate geologist's transportation as requested by Eagle-Picher has not been included because the provision for geologists in Exhibit "A" should take care of the item and it is believed was considered at the time the contract was drawn.

The increased cost of the project has been discussed with the operator and they are in agreement and will sign the amendment if and when you approve.

ABNeedham:dg
cc Dutton
Grosh
Broughton
Hill

A. B. Needham
Executive Officer
Field Team, Region V

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
~~[illegible]~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

September 8, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Amendment No. 1 - Docket DMEA-2399, Contract Ida-K339 Eagle Picher Company

Here are the original and two copies of the subject amendment increasing the cost of drilling per foot to $1.73, pursuant to the request by Eagle Picher attached to the amendment.

Our field representatives verify that, since the contract was drawn, the prevailing cost for churn drilling in the area has increased from $1.50 to $1.65. It is also apparent to the field team that additional costs over and above the actual drilling would be necessary to evaluate the findings; and, therefore, the request that surveying and assaying be included appeared reasonable and should have been included in the original contract. The services of a geologist, as stated in the exhibit, made no mention of other expenses than salary, but we assume the company's charge for $0.015 per foot for transportation to be logical.

Since there has been some unfavorable drill tests, thereby decreasing footage in certain areas, the total funds expended will not be increased by the additional costs.

One copy of the amendment has been retained by the company, our Platteville office, the Regional fiscal section, and this office.

A. B. Needham
Executive Officer
Field Team, Region V

Attachments
ABNeedham:dg
cc Dutton
Gresh
Broughton
Hill
Region V
files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WAS[redacted]
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

August 27, 1952

Mr. Corbin Shouse
Legal Department
Eagle-Picher Company
1st National Bank Building
Miami, Oklahoma

Dear Mr. Shouse:

Pursuant to your request of August 22, 1952, for an amendment to your DMEA exploration project contract Idm-2339 increasing the cost per foot of churn drilling by $0.25, there are here 7 copies of such an amendment.

Please have Mr. Isern sign all copies, then retain a carbon, and return all others including the original to this office for further distribution.

Sincerely yours,

A. B. Needham
Executive Officer
Field Team, Region V

Enclosures 7

ABNeedham:dg
cc Dutton
Orosh
Broughton
Region V
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASH[redacted]
Region V
2908 Calfax Avenue South
Minneapolis 8, Minnesota

July 22, 1952

Eagle Picher Company
First National Bank Building
Miami, Oklahoma

Gentlemen:

Contribution by the Government to the costs of the work under Defense Minerals Exploration projects, such as your Contract Idm-E339, necessarily depends upon some suitable evidence of the various items of cost to which the Government contributes. Generally, this evidence is in the form of original or certified copies or certified transcripts of invoices, purchase orders, purchase contracts, or payrolls, for all costs to which the Government is to contribute. Such documentary evidence of each item of cost is attached to the monthly report, Form MM-10h.

However, when expedient, the Government may waive such documentation; and when this is the case, it is necessary for an auditor of the Administration to audit the books of the operator before or when the final voucher is submitted.

Please be advised the documentation of your expenditures are hereby waived until completion of the project, at which time a full on-site audit will be made.

Very truly yours,

A. E. Needham
Executive Officer
Field Team, Region V

AENeedham:dg
cc Dutton
Gresh
Broughton
Cont. Ad. & Audit Div., DMEA, [redacted]
Region V
files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
Region V
2906 Colfax Avenue South
Minneapolis 8, Minnesota

July 9, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2399, Contract Idm-E339
Eagle Picher Company

Returned here are the original and two copies of the duly executed subject contract.

One copy has been retained by the operator, one by this office, and one transmitted to the Regional fiscal section.

Walter E. Lewis
for A. B. Needham, Executive Officer
Field Team, Region V

Attachments

ELewis:dg
cc Dutton
Grosh
Broughton
Hill
Region V
files

BROUGHTON

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

June 13, 1952

Memorandum

To: W. A. Grosh, Bureau of Mines, Box 261, Platteville, Wis.

From: Executive Officer, Field Team, Region V

Subject: Docket DMEA-2399, Contract Idm-E339
Eagle Picher Company

Here are six copies of the subject contract (short form) which has been signed by the Government.

Please look over the contract, make a copy for your files and, if you approve, transmit these six copies to the proper official (probably through Mr. Chandler to the Miami office) for signature advising them to retain the copy marked "Operator's Copy" and return the original and four other copies to this office for further distribution.

You will note the P.S. on the transmittal requires insertion of the time needed to start exploration.

A. B. Needham
Executive Officer
Field Team, Region V

Enclosure

ABNeedham:mg

cc: Lutton
Broughton
Region V
Files
df

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Jun 11 1952

C O P Y

Mr. A. B. Needham
Executive Officer, Region V
DMEA Field Team
2908 Colfax Avenue, South
Minneapolis 8, Minnesota

Re: Docket No. DMEA 2399
Eagle-Picher Company
Lead-Zinc

Dear Mr. Needham:

We are enclosing the original and five copies of the above contract, signed by this office for the Government, together with Appendix I, 8 pages, Guaranty, Exhibit "A" (3 pages), and one map.

The four applications of the Eagle-Picher Company, Docket No's. DMEA 2399, 2401, 2402, and 2403 have been incorporated into one application, Docket No. DMEA 2399, and one contract as has been previously discussed with your office. In event the Eagle-Picher Company secures leases on the property adjacent to presently included leases, these leases may be incorporated by amendment.

Before the contract can be executed, it will be necessary for a duly authorized official of the Company to sign the Guaranty which is drawn in the same form as used for the Vinegar Hill contract Idm-E161.

If the contract meets with your approval, kindly present it to the applicant for approval and signature, and when completed distribute in the usual manner. In event the contract is not satisfactory, return all copies with your recommendation concerning any necessary modification.

Sincerely yours,

/s/ Frank E. Johnson
Chairman, Operating Committee
Defense Minerals Exploration
Administration

Enclosures-6

APPROVED:

/s/ J. H. Hedges
Member, Bureau of Mines

/s/ D. M. Lemmon
Member, Geological Survey

P.S. It will be necessary to insert in the contract in the space provided under Article 3 the number of days from the date of the contract in which work shall commence.

E.P.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

April 1, 1952

Memorandum

To: Operating Committee, Defense Minerals Exploration Administration, Interior Building, Washington 25, D. C.

From: Executive Officer, Field Team, Region V

Subject: Dockets 2399, 2401, 2402, and 2403
Eagle-Picher Company

Returned are the four docket applications and reviews, together with two copies of the field team representatives' opinion of the four applications.

Both the Washington reviewers and the field engineers agree that project 1 is hard to justify on its own merit. The statement by the field engineers questioning the strip of land between project 1 and 2 is quite pertinent.

The geologic probability of eventual certification of projects 2 and 3 seem very favorable, and there is no reason for separate projects.

Project 4 could stand alone, but the same condition exists between projects 3 and 4 as we mentioned about projects 1 and 2, i.e. strip of land between the two.

As noted in the last paragraph of the field team letter, perhaps there might be discrimination by separate projects.

However, it appears to this office that inquiry should be made of the Eagle-Picher Co. if they do have control or intend to get control of the strip of land between projects 1 and 2 and between projects 3 and 4; if so, all four projects should be combined into one project. Perhaps this would be quite acceptable to the company.

If they do not control the intervening land, it appears projects 2 and 3 could be combined into one project and projects 1 and 4 as separate projects.

The most acceptable to the field team is one project.

Please keep us informed as to correspondence with Eagle-Picher Co. and developments as to the number of projects.

A. B. Needham
Executive Officer
Field Team, Region V

Attachments

ABNeedham:dt

cc Dutton
Grosh
Broughton
Region V
files
df

E.P.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
~~WASHINGTON 25, D.C.~~
Region V
2908 Colfax Avenue South
Minneapolis 8, Minnesota

March 26, 1952

Memorandum

To: W. A. Grosh, Bureau of Mines, Box 261, Platteville, Wis.

From: Executive Officer, Field Team, Region V

Subject: Dockets DMA-2399, DMA-2401, DMA-2402, DMA-2403 all with Eagle Picher Company, Lafayette County, Wis.

Here is one set of applications for each of the subject dockets together with the transmittal.

It will be noted in the "Review" that field check is not necessary but paragraph 3 of the transmittal needs study.

It appears the applications are good as is and that perhaps separate contracts would be satisfactory.

Le me have the field team report as soon as possible so we can expedite this contract.

Please return the documents as they are Washington copies.

A. B. Needham

Enclosures:

ABNeedham/mg

cc: Dutton
Broughton
Reg. Dir.
files
df

DMA

E-P

John Chandler called 9-13-51 (Genl. Mgr. E-P.)

Says E P is applying for 12 exploratory loans in Wis, Wanted info. He's going to call Needham today to see if his applications are O.K.

JUN 24 1954

CONFIDENTIAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL GEOLOGICAL-ENGINEERING REPORT BY FIELD TEAM REGION V

DOCKET NO. D.M.E.A. 2399
CONTRACT NO. Idm E-339
COMMODITY: Zinc-Lead

The Eagle-Picher Company
Lafayette County, Wisconsin

W. A. Grosh, Mining Engineer
U.S. Bureau of Mines
W. A. Broughton, Geologist
U.S. Geological Survey

CONFIDENTIAL

June 24, 1954

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Summary:

During the period of the DMEA contract from June 11, 1952 to March 8, 1954, The Eagle-Picher Company completed 197 churn drill holes with an average depth of 179 feet. A total of 35,278.5 feet were drilled at an average cost of $1.926 per foot or a total expenditure under the contract of $67,957.85. The contract area included 18 properties under lease east of Cuba City and northwest of Benton in Lafayette County, Wisconsin. The exploration was a continuation of the company program and divided into three stages, preliminary pattern drilling, structure drilling and detail drilling.

Exploration under the contract was conducted on 17 leases. Sufficient mineralization was encountered on 4 of the leases to justify certification of the contract. All of these can be considered new discoveries although other ore was known to exist on some of the leases prior to the DMEA contract.

The work was conducted in a satisfactory manner. The program succeeded in showing 202,000 tons of ore containing 6.02 percent zinc and 0.11 percent lead. Under favorable economic conditions the mineable units of these reserves could be expected to produce an estimated 15,095 tons of 60 percent zinc concentrates. Several places within the contract area are favorable for finding additional reserves through further exploratory work.

Location:

The exploration program was conducted on a group of leases east of Cuba City and northwest of Benton, Lafayette County, Wisconsin. The contract area covered 18 properties totaling approximately 2,279 acres. The extreme limits of the contract extended 4½ miles north and south and 2 miles east and west. Figure 3 included with this report shows the boundaries of the individual leases. Appendix I of the contract contains detailed legal descriptions of the leases. Below is tabulation of the leases showing locations by section, township and range.

Lease	Section	Township	Range
Busch, Clarence J.	31 6	2N 1N	1E 1E
Calvert, Francis M.	6	1N	1E
Calvert, Wm. H et al	7 & 8	1N	1E
Calvert, Wm. H et al	5	1N	1E
Cole, Verna B.	31	2N	1E
Curtis, Charles	31	2N	1E
Grey, Henry C.	7	1N	1E
Gray, John O.	7	1N	1E
Heim, Delmar J.	32	2N	1E
Heim, Fred	29	2N	1E
Hinderman, Henry V.	31	2N	1E
Houtakker, Raymond B.	6 & 7	1N	1E
Pinch, Vincent	5	1N	1E

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

Platteville, Wisconsin
DATE: May 21, 1954

TO : Carl E. Dutton

FROM : W. A. Broughton

SUBJECT:

Enclosed are two copies (with 4 illustrations) of the Final Eagle-Picher DMEA report. Will you please process as usual.

WAB:mcw

Lease	Section	Township	Range
Ralph, Clarence P.	6	1N	1E
Snyder, Wm. F.	30	2N	1E
Splinter, Arnold J.	31	2N	1E
Wilkinson, Fred W.	32	2N	1E
Wilkinson, Fred W. & J. Frank	32	2N	1E
Wissman, Bessie	5	1N	1E

Contract Provisions and Amendments:

The U. S. Government and The Eagle-Picher Company of Miami, Oklahoma contracted under provisions of the Defense Minerals Exploration Administration to explore for lead and zinc ores in Lafayette County, Wisconsin. Under Contract Idm E-339, Docket 2399, dated June 11, 1952 the company was to perform an estimated 110,658 feet of churn drilling at a cost of $184,038.00 with the government to share 50 percent of the costs. In lieu of actual costs, a price of $1.565 per foot was agreed upon to cover contract drilling, surveying, assaying and transportation expense. Additional costs allowed were $5.00 each for plugging holes, chief geologist expense not to exceed $425.00 per month and field geologist expense not to exceed $397.00 per month.

In lieu of subordination agreements, the company guaranteed payment of any royalties due the government. Eighteen properties in four areas were included in the contract. The exploration program in each area was to be done in three phases, pattern drilling, structure drilling

and detail drilling to delineate ore bodies. Location of the pattern drill holes was specified in the contract. Subsequent structure and detail drilling was to be done only if the government and the company agreed it was warranted from the results of the pattern drilling. In each area, phase one was to be completed before entering phase two and phase two completed before phase three was begun.

Amendment No. 1 dated November 12, 1952 increased the unit cost for drilling from $1.50 to $1.565 per foot to allow for surveying and assaying which were not provided for in the original contract. This amendment was retroactive to cover all drilling under the contract. The amendment also increased the total amount of the contract from $184,038.00 to $191,230.78.

On March 30, 1953 the government was notified by letter that the company had surrendered 12 of the leases in the contract. By a letter dated May 7, 1953, the company notified the government of the surrender of 5 additional leases. This left only two leases in the contract, the Francis M. Calvert and the Clarence P. Ralph, both in Section 6, Township 1 North, Range 1 East.

Certification:

Work performed under the contract indicated or discovered ore on four properties, the Wm. H. Calvert Estate, Francis M. Calvert, Clarence Ralph and the Fred W. and J. Frank Wilkinson. Under favorable economic conditions, extraction of developed ore on the Francis Calvert

and Clarence Ralph properties could be expected. Additional exploratory work on the other discoveries could develop commercial ore bodies. It is therefore recommended that the contract be certified.

Possible Exploitation:

Reserves presented in the geologic section of this report are as follows:

Area	Property	Ore Block	Tons of Ore	Grade Percent Zinc	Grade Percent Lead
2	F. M. Calvert	A	137,100	6.47	0.13
2	Calvert Estate Tract 1	B	10,200	3.66	
2	C. F. Ralph	D	41,400	5.92	0.08
		E	13,300	3.42	0.07
	Total		202,000	6.02	0.11

In addition, several other discoveries were made. No ore reserves were assigned to these discoveries because of their isolated nature and lack of definite information to justify their projection. These discoveries are as follows:

Area	Property	Ore Block	Vertical thickness	Grade Percent Zinc	Grade Percent Lead
2	Calvert Estate Tract 1	C	10 feet	0.17	3.51
2	C. P. Ralph	F	15 feet	0.07	4.03
3	F.W. & J.F. Wilkinson	G	20 feet	4.33	
		H	8 feet	7.17	

While some of the other discoveries made under the DMEA program have possibilities of being increased by further exploration, only the Calvert-Ralph ore body has sufficient reserves indicated by the DMEA drilling to be considered minable.

The Eagle-Picher Company central mill, about 2½ miles south of the Illinois-Wisconsin border, treats ore from the Graham-Snyder mine at the mill site as well as ore from the Birkett incline about 5 miles north of the mill in Wisconsin. As the Calvert and Ralph properties are only about 7 miles from the central mill, production from them will most likely be treated in the central mill also.

To gain access to the ore body will require either a 170-foot shaft or a 1,500-foot incline. The ore is sufficiently thick for the use of truck haulage and large equipment. Therefore, the increased cost for an incline over the cost of a shaft could probably be justified by the savings in mining costs.

Assuming an overall mining and milling recovery of 80%, the measured ore reserves as stated above could be expected to result in the following production under favorable economic conditions.

Property	Ore Block	Tons of Ore	Grade Percent Zinc	Grade Percent Lead	Tons 60% Zinc Concentrates
F. M. Calvert	A	137,100	6.47	0.13	11,827
C. P. Ralph	D	41,400	5.92	0.08	3,268
Total		178,500	6.34	0.12	15,095

Description of the work:

The first drill hole under the contract was started June 12, 1952 and the last one was completed February 4, 1954. A total of 197 holes were completed at an average depth of 179 feet or a total of 35,278.5 feet of drilling.

Specified in the contract were the general locations of 90 preliminary pattern holes which were to be drilled prior to other phases of the drilling program. Drilling by the company prior to the DMEA contract accomplished the purpose of 23 of the required preliminary pattern holes. The purpose of the remaining 67 preliminary pattern holes was accomplished in each area before the program progressed to the second and third phases.

All holes were drilled by churn drills using 6-inch chisel-type bit. Normally only the upper unconsolidated weathered zones required

casing; however, there were a number of holes in the contract area which encountered caving ground and required casing to considerable depths. The normal procedure was to drill five feet and bail out the sludge with a flap-type valve bailer. The sludge was dumped into a tub, mixed, a representative sample taken and placed in a pile. The piles were used for logging purposes and provided samples for assay when necessary. When ore zones were encountered, the sample intervals were usually reduced to 2½ feet.

During the course of the contract from one to three drills were devoted to the drilling. The surface of the contract area is crop or pasture land and little difficulty was experienced in moving the drills except for a short period in the spring or after heavy precipitation when the ground was soft. The drilling program was conducted to avoid damage to growing crops as much as possible.

The exploration program consisted of three classifications or phases of drilling in each of four areas. The first phase was preliminary pattern drilling with holes on quarter-mile intervals along east-west rows a quarter of a mile apart. The holes were staggered so the average of the pattern was about 20 holes per section of land. The approximate locations of all preliminary pattern holes were specified in the contract but locations varied some from the ideal pattern because of the irregular outline of the leases and previous drilling in the areas.

Upon completion of the preliminary pattern drilling in each area, structure and detailed drilling followed if it was warranted by the results of the first phase of drilling.

Twenty-three of the 90 specified preliminary pattern holes were completed before the starting date of the contract. Following is a brief description by leases of the drilling accomplished under the contract.

Raymond F. Houtakker Area 1: Three preliminary pattern holes were drilled on this lease. These were all blank except for minor amounts of iron sulfides.

John O. Gray Area 1: Two preliminary pattern holes drilled on this property showed only minor amounts of iron sulfide.

Henry C. Gray Area 1: Nine holes were drilled on this lease prior to the DMEA contract and accomplished the purpose of 4 of the specified preliminary pattern holes. Thirteen holes were drilled under the DMEA program. Three of these holes showed sub-marginal grade ore.

Francis M. Calvert Area 2: Three holes were drilled on this lease prior to the DMEA contract and satisfied the requirements for one of the seven preliminary pattern holes. Fifty holes were drilled under the DMEA contract. An ore zone, extending 1,400 feet westerly from the Ralph property line, was indicated by the drilling. A continuation of this ore zone extended into the Ralph property.

Clarence P. Ralph Area 2: Thirty-one holes were drilled on this property under the contract. All preliminary pattern holes were accounted for. The drilling indicates a 400-foot ore zone extension of the Francis Calvert ore. To the south one small block of ore was indicated but is too small to be mineable at the present stage of development. One other hole showed lead ore in the upper drab with no indicated connection to mineable ore.

William H. Calvert Estate Area 2: The company drilled one hole on the lease prior to the DMEA contract. The purpose of three preliminary pattern holes along the south border of the lease was accomplished by corresponding holes on the north edge of leases to the south not included in the program. Three holes indicated a small ore zone but not of mineable size.

William F. Snyder Area 3: One hole was drilled prior to the DMEA contract and four holes under the contract. All holes were of the order of preliminary pattern drilling and no further work was done. The holes were blank and showed only minor amounts of iron sulfides.

Arnold J. Splinter Area 3: One hole was drilled prior to the DMEA contract and three holes under the contract. One preliminary pattern hole was satisfied by a hole on the adjoining lease. Only minor amounts of iron sulfide were encountered and two of the holes penetrated soft raveling ground.

Verna B. Cole Area 3: Four holes were drilled prior to the DMEA contract and satisfied the requirements of 3 preliminary pattern

holes. Twelve holes were drilled under the contract. None of the holes showed ore.

Henry V. Hinderman Area 3: Four holes were drilled on this lease under the contract. One of the preliminary pattern holes was satisfied by a hole on the adjoining V. B. Cole lease. One preliminary pattern hole was not drilled or accounted for by other drilling. All the holes surrounding this location were blank and this required hole was not deemed necessary.

Charles Curtis Area 3: The two preliminary pattern holes called for on this lease were drilled prior to the DMEA contract and no drilling was done on the lease under the contract.

Clarence Busch Area 3: Five holes were drilled prior to the DMEA contract and satisfied the requirements of 5 preliminary pattern holes. One of these holes, between two of the originally proposed holes, served the purpose of both. Six holes were drilled under the contract. One of these holes showed submarginal ore. Several of the holes encountered loose ground which necessitated casing.

Delmar J. Heim Area 3: Three holes were drilled under the contract at the locations designated for preliminary pattern holes. One preliminary pattern hole was satisfied by a hole on the adjoining F. W. Wilkinson lease. Only minor amounts of iron sulfides were penetrated on this lease.

Fred W. Wilkinson Area 3: Ten holes were drilled on this lease under the contract and satisfied all the requirements for preliminary

pattern drilling. One hole penetrated marginal ore and one hole penetrated submarginal ore. Several holes showed loose and broken ground.

Fred W. and J. Frank Wilkinson Area 3: No preliminary pattern holes were designated on this lease. Twelve holes were drilled under the contract. Two holes showed mineable grade ore. In one of these holes a considerable portion of the ore was in the form of carbonate in the upper horizons of the hole. The other hole showed mineable grade lead-zinc ore but was separated from the other hole by submarginal ore. Further drilling in the vicinity of this lease could add to the ore reserves.

Vincent Pinch Area 3: Five preliminary pattern holes were drilled on this property in the approximate locations called for in the contract. Only minor amounts of zinc and some iron sulfides were found. No further drilling was done.

Beazie Wiseman Area 3: Two holes were drilled on this lease at locations specified in the preliminary pattern drilling. Only a few traces of sphalerite and galena and some iron sulfides were encountered.

Wm. H. Calvert Estate Area 3: Fourteen holes were drilled on this lease prior to the DMEA contract and satisfied the requirements for two of the preliminary pattern holes. The seven holes drilled under the contract completed the required pattern drilling. A few traces of sphalerite and some iron sulfide were encountered in the DMEA drilling.

Fred Heim Area 4: Nine holes were drilled on this property under the DMEA program and all of the specified preliminary pattern holes were drilled. All holes had some marcasite and one hole had traces of sphalerite.

The locations of all holes are shown on maps accompanying this report. Indicated on the maps are the significant lead-zinc mineralization and areas of ore reserves indicated by the drilling. Appendix A contains a complete set of logs showing formations encountered, estimated values and assay results.

The operator's final geologic and engineering report was submitted March 4, 1954. The report was very brief and was concerned solely with the reserve estimate. Maps and logs supplied with the monthly progress reports contained all the essential factual data on the exploration program.

Expenditures:

Tabulated below are the essential items of expenditure incurred under the contract.

Contract amount	$191,230.78
Total approved expenditure	67,957.85
Government's share of cost	33,978.88
Government's share unexpended	61,636.51

The 35,278.5 feet of hole were drilled at an agreed unit cost of $1.565 per foot. Other allowable costs under the contract were $5.00

each for plugging holes, a maximum of $425.00 per month for chief field geologist and a maximum of $397.00 per month for a field geologist. A distribution of items of expense is as follows:

Item	Total Approved Expense	Cost per Feet
Drilling	$ 55,210.87	$ 1.565
Plugging drill holes	985.00	.028
Technical services	11,761.98	.333
Total	$ 67,957.85	$ 1.926

No audit has been made of this contract.

Technical Control - Supervision:

Supervision of the program was the direct responsibility of the company. One resident field geologist was in charge of supervising the drilling and logging holes. He was assisted when necessary by an additional geologist and engineering personnel who did the necessary surveying. A chief geologist in the company's main office was responsible for general overall supervision and spotting of drill holes.

During the program members of the field team made frequent inspections of the work. Results of the drilling were reviewed as the program progressed and plans for future drilling were discussed.

The company supplied logs and maps of all drill holes with their monthly reports. This data was recorded in the District Atlas, and copies of these logs are the ones included with this report.

Final geologic report and results of drilling by The Eagle-Picher Co. between Cuba City and Benton, Lafayette County, Wis.

W. A. Broughton

U. S. Geological Survey

Docket no.: DMEA 2399

Contract no.: Idm-3339

Commodity: Zinc-lead

Location of property

The Eagle-Picher Co. properties are in Lafayette County, Wisconsin, between Cuba City and Benton (fig. 1). Detailed descriptions of the leases were submitted with the company's original application and are not repeated in this report. For prospecting reasons the leases were divided into four areas. The leases, arranged according to areas, are described by township, range, and general section locations in table 1.

Exploration

From June 1952 to February 1954 The Eagle-Picher Co. drilled 197 holes under DMEA contract no. Idm-3339. Drilling data are given in table 2. Most of the hole locations are shown in figure 3; the others are shown on the detail map, figure 4. Logs of the drill holes are given in Appendix A.

Table 1. Properties between Cuba City and Benton, Wis., leased by The Eagle-Picher Co. and included in BMRA exploration contract Idm-8539

Area	Property	Township N.	Range E.	Section
1	Gray, H. C.	1	1	7
	Gray, J. O.	1	1	7
	Houtakker, R. B.	1	1	6
2	Calvert, F. M.	1	1	6
	Calvert, Wm., estate, tract 1	1	1	7
	tract 2	1	1	8
	Ralph, C. F.	1	1	6
3	Busch, C. J.	1	1	6
		2	1	31
	Cole, V. B.	2	1	31
	Calvert, Wm., estate, tract 3	1	1	5
	Curtis, C.	2	1	31
	Heim, D. J.	2	1	32
	Hinderman, H. V.	2	1	31
	Pinch, V.	1	1	5
	Snyder, W. F.	2	1	30
	Splinter, A. J.	2	1	31
	Wilkinson, F. W.	2	1	32
	Wilkinson, F. W., and J. F.	2	1	32
	Wiseman, B.	1	1	5
4	Heim, F.	2	1	29

Occurrence of ore

Ore-bearing beds

Zinc and lead minerals of the Cuba City-Benton area occur in the Galena, Decorah, and Platteville formations, all of Ordovician age. Miners' terms subdividing the formations into members are used in this report. The Galena formation is represented, from top to bottom, by the "upper buff" and "drab." The Decorah is divided from top to bottom into the "gray," "blue," "oil rock," and "clay bed." The Platteville is similarly divided into the "glass rock" and "Trenton" (fig. 3).

Zinc sulfide ore occurs in the upper beds of the "drab" and from the middle beds of the "drab" to the upper beds of the "Trenton." Lead sulfide ore occurs in the upper beds of the "drab." Zinc carbonate ore occurs from the lower beds of the "drab" to the upper beds of the "gray" (fig.2). The stratigraphic ranges of the various ore blocks discovered under DMRA contract Idm-2320 are shown in table 2.

Geologic structure

Ordovician rocks of the Cuba City-Benton area have been gently folded into anticlines and synclines, trending in northeasterly and northwesterly directions (fig. 3). In general, the ore bodies are on the limbs of major northwestward-trending synclines (figs. 3 and 4).

The ore commonly is in steeply inclined mineralized fractures, called "pitches." The pitches are reverse faults roughly paralleling synclinal trends and have developed on both limbs of the synclines. They are inclined away from each other on opposite limbs and some extend

from the lower part of the "drab" through the "Trenton." Commonly, minor inside pitches parallel a major outside pitch. Some of the pitches terminate in and are offset by "flats," which are nearly horizontal bedding-plane openings usually on the syncline side of the major pitch. Individual pitches and flats range in thickness from a fraction of an inch to several feet. Thin pitches and flats, closely spaced, may constitute a mineable ore body. Major flats occur at several stratigraphic horizons such as the "Trenton"-"glass rock" contact, the "oil rock"-"blue" contact, and the "gray"-"drab" contact. Besides the pitches and flats, ore minerals in major disseminations occur in several stratigraphic zones such as the upper "Trenton," lower "glass rock," "clay bed," "oil rock," and "blue"-lower "gray." Some ore occurs in nearly vertical veins (crevices) cutting the "drab." The crevices generally occur in groups of several parallel veins, constituting "ranges" that commonly trend northwestward. Individual crevices are normally as much as several inches wide, with ore shoots, called "openings," at several stratigraphic horizons.

The F. M. Calvert ore block A and C. P. Ralph ore block D appear to be parts of the same southwestward-dipping pitch-type ore body (fig. 4). C. P. Ralph ore block F apparently is in a crevice-type deposit. Calvert estate tract 1 ore block B (fig. 3) appears to be in a northeastward-dipping pitch-type deposit, and ore block C apparently is in a crevice-type deposit. Drilling information is inadequate to determine the structural control of the other ore blocks.

Table 2. Drilling data from exploration by The Eagle-Picher Co. under DMEA contract no. Idm-E339

Area	Property	DMEA HOLES Total drilled	DMEA HOLES Numbers (incl.)	Ore block	Tons of ore	Thickness (tonnage not est.)	Percent Zinc	Percent Lead	Stratigraphic range of ore
1	Gray, H. C.	13	10-22						
	Gray, J. O.	2	1, 2						
	Houtakker, R. B.	3	1,2,4						
2	Calvert, F. M.	50	4-53	A	137,100		6.47	0.13	Lower "drab" to upper "Trenton"
	Calvert estate, Tract 1	17	24-40	B	10,200		3.86		"Blue" to upper "Trenton"
				C		10 feet	0.17	3.51	Upper "drab"
	Tract 2	4	2-5						
	Ralph, C. P.	31	1-31	D	41,400		5.92	0.08	Lower "drab" to upper "Trenton"
				E	13,300		3.42	0.07	"Oil rock"
				F		15 feet	0.07	4.03	Upper "drab"
3	Busch, C. J.	6	6-11						
	Cole, V. B.	12	5-16						
	Calvert estate, Tract 3	7	15-21						
	Curtis, C.	0							
	Heim, D. J.	3	1-3						
	Hinderman, H. V.	4	1,3-5						
	Pinch, V.	5	1-5						
	Snyder, W. F.	4	2-5						
	Spainter, A. J.	3	2-4						
	Wilkinson, F. W.	10	1-10						
	Wilkinson, F. W. & J. F.	12	1-12	G		20 feet	4.33		Lower "drab" to upper "gray"
				H		8 feet	7.17		"Oil rock" and "clay bed"
	Wiseman, B.	2	1, 2						
4	Heim, F.	9	1-9						
TOTAL					202,000		6.02	0.11	

Character of the ore

Ore minerals in the ditches and flats are chiefly medium- to coarse-grained sphalerite and minor medium- to coarse-grained galena. Ore minerals in the crevices are chiefly medium- to coarse-grained galena and minor medium- to coarse-grained sphalerite. The disseminated ore minerals are chiefly fine- to medium-grained sphalerite and minor fine- to medium-grained galena. Above the water table, sphalerite has been largely converted to smithsonite. The gangue, other than rock, is chiefly marcasite, pyrite, and calcite, with minor amounts of barite.

Results of exploration

Drilling by The Eagle-Picher Co., under the DMEA contract, was carried out in 17 of the 18 properties covered by the exploration contract (table 2). It showed sphalerite from the upper beds of the "upper buff" to the lower beds of the "Trenton," galena from the lower three-quarters of the "upper buff" to the upper beds of the "Trenton," and smithsonite from the lower beds of the "drab" to the upper beds of the "gray." At least small amounts of sphalerite and (or) galena were found in all the properties drilled except the W. Snyder and A.Splinter lands (App. A, logs), and smithsonite was found in the F. W. and J. F. Wilkinson property. Commercial quantities of zinc and lead (arbitrarily 3 percent combined zinc and lead for at least 8 feet) were found in 4 of the 17 properties drilled, namely: the F. M. Calvert, C. P. Ralph, Calvert estate tract 1, and the F. W. and J. F. Wilkinson properties.

These ore blocks are shown in figures 3 and 4. Tonnages and grades of the various ore blocks are given in table 2. The factor of 13 cubic feet of rock per ton was used in all tonnage calculations. A total of 202,000 tons containing 6.02 percent zinc and 0.11 percent lead has been proven.

None of the ore blocks can be considered as having been entirely drilled out. Small ore blocks indicated by only a few drill holes obviously could not be mined. However, their ore potentials are good, and further drilling might very well develop mineable quantities of ore. They should definitely be regarded as discoveries.

Recommendations.

It is the opinion of the reporting geologist that drilling by The Eagle-Picher Co. discovered ore in the properties of F. M. Calvert, C. P. Ralph, Calvert estate tract 1, and F. W. and J. F. Wilkinson. Thus, it is recommended that the exploration be certified as a discovery.

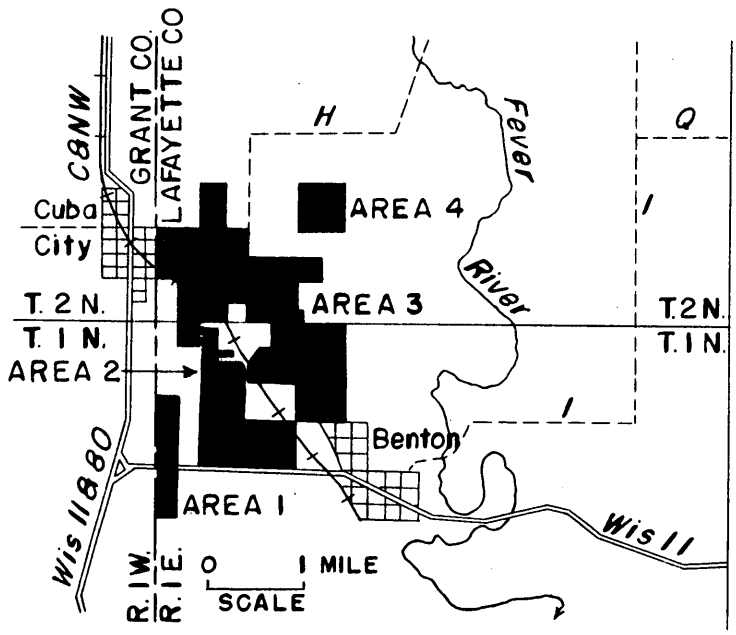

Figure 1. Index maps showing location of properties leased by The Eagle-Picher Co. near Cuba City, Grant County, and Benton, Lafayette County, Wisconsin.

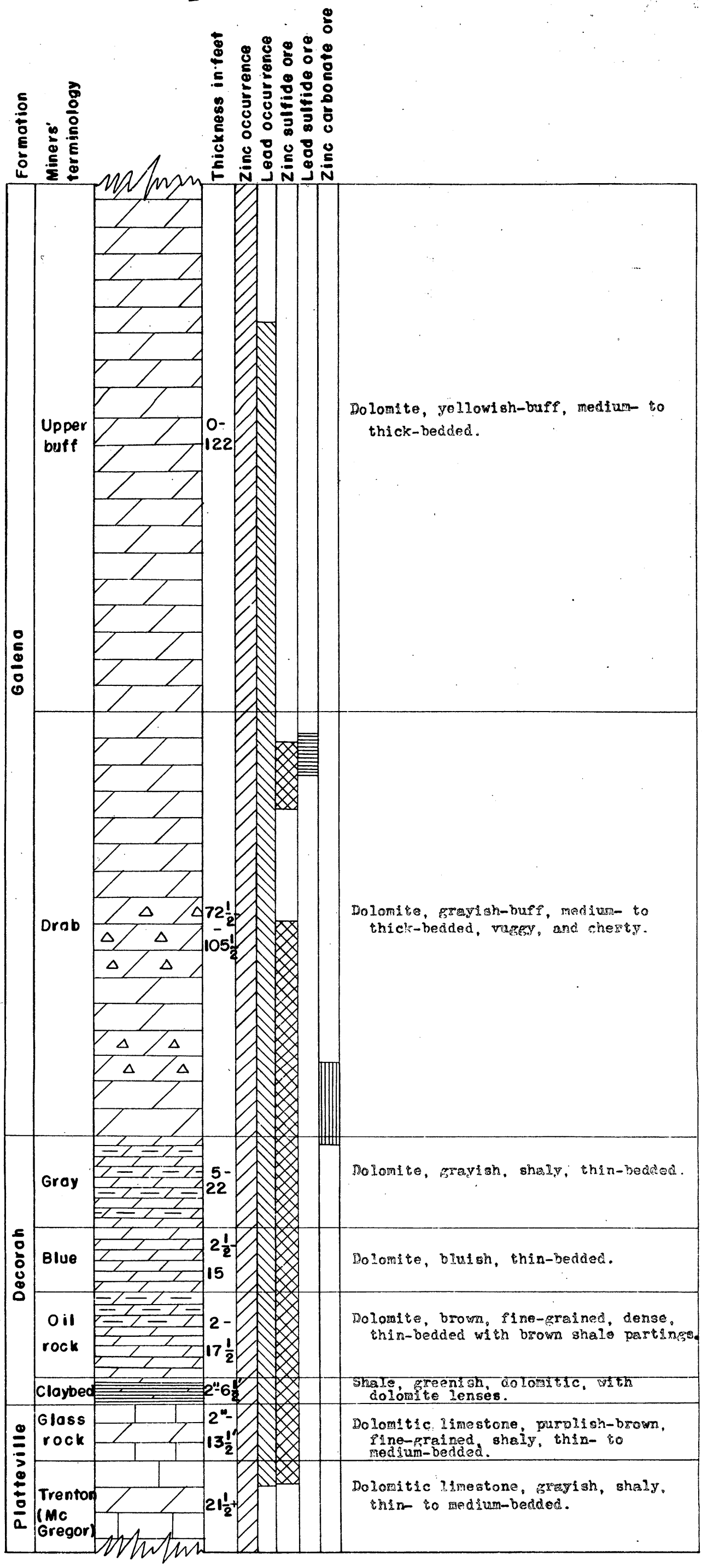

Figure 2. Stratigraphic section of the area in Lafayette County, Wisconsin, leased by The Eagle-Picher Co., showing occurrence of lead and zinc minerals and ore.

Appendix A

Drill Hole Logs and Assays

	Holes	Pages
Area I		
Henry C. Gray	10-22	1a-23a
John O. Gray	1, 2	24a-26a
Raymond B. Houtakker	1, 2, 4	27a-31a
Area II		
Calvert Estate	2-5, 24-40	32a-67a
Francis M. Calvert	4-53	68a-150a
Clarence P. Ralph	1-31	151a-198a
Area III		
Clarence J. Busch	6-11	199a-209a
Calvert Estate	15-21	210a-218a
Verna B. Cole	5-16	219a-230a
Delmar J. Heim	1-3	231a-233a
Henry V. Hinderman	1, 3-5	234a-239a
Vincent Pinch	1-5	240a-245a
Wm. F. Snyder	2-5	246a-249a
Arnold J. Splinter	2-4	250a-254a
Fred W. Wilkinson	1-10	255a-267a
Fred W. & J. Frank Wilkinson	1-12	268a-282a
Bessie Wiseman	1-2	283a-284a
Area IV		
Fred Heim	1-9	285a-296a

Lafayette County
~~Sec. [illegible] 150~~

~~Serial No. 17~~
Hole No. 10
Collar Elevation: 1034.21'
Depth of Hole: 290'
Location: Henry C. Gray

Date completed: 6/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	18	Brown clay	
18	30	Buff dolomite, buff clay 10, limonite 3	
30	45	Buff dolomite, limonite ½	
45	60	Brown-buff dolomite, trace marcasite	
60	75	Light gray clay 1, light brown dolomite, few specks limonite	
75	90	Light brown-buff dolomite, a speck limonite	
90	105	Light brown-buff dolomite	
105	120	Light brown-buff dolomite, a speck limonite	
120	130	Light brown dolomite, a speck limonite & marcasite	
130	135	Light brown dolomite, tan dolomite 5, few specks marcasite	
135	140	Light brown dolomite, trace gray chert, tan dolomite 1, few specks marcasite	
140	145	Brown dolomite, brown & tan chert 96-4, trace marcasite	DRAB - 140
145	155	Brown dolomite, brown & tan chert 97-3, trace marcasite	
155	165	Brown dolomite, gray chert 99-1, trace marcasite	
165	175	Brown dolomite, gray dolomite, gray chert 85-14-1, trace marcasite	
175	185	Brown dolomite, brown & gray chert 99-1, marcasite 1/10	
185	195	Brown dolomite, brown & gray chert 94-6, trace marcasite	
195	205	Brown dolomite, gray & tan chert 97-3, trace marcasite	
205	215	Brown dolomite, gray & tan chert 95-5, trace marcasite	
215	225	Brown dolomite, brown & tan chert 97-3, trace marcasite	
225	230	Brown dolomite, brown & tan chert 98-2, trace marcasite	
230	235	Brown dolomite, trace marcasite	
235	240	Brown dolomite, trace marcasite	
240	245	Gray dolomite, trace marcasite	GRAY -240
245	250	Gray dolomite, few specks marcasite	
250	255	Gray-brown dolomite, few specks marcasite	
255	257½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, trace marcasite	BLUE - 255.5
257½	260	Gray dark-speckled dolomite, trace marcasite, a speck blende	
260	262½	Dark gray dark-speckled dolomite, few specks marcasite	
262½	265	Brown & tan fossiliferous dolomite limestone & brown shale, gray dark-speckled dolomite 80-20, trace marcasite	OIL - 263
265	267½	Brown & tan fossiliferous dolomite limestone, brown shale 1, gray shale 1, trace marcasite	
267½	270	Brown & tan fossiliferous limestone, brown shale 3, gray shale 1, few specks marcasite	
270	275	Light brown & tan limestone, trace marcasite, a speck blende	
275	277½	Brown & tan limestone, light gray-brown dark-speckled limestone20, few specks marcasite	
277½	280	Brown limestone, balck fossiliferous limestone, gray clay 40-40-20, green shale 5, trace marcasite	CLAY - 278.5'

Continued

Lafayette County
~~Sec. R[illegible] 150~~

~~Serial No. 17~~
Hole No. 10 (Cont'd)
Collar Elevation: 1034.21'
Depth of Hole: 290'
Location: Henry C. Gray

Date completed: 6/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
280	282½	Brown & tan fossiliferous limestone, gray clay 80-20, Trace marcasite GLASS - 280.5'
282½	285	Brown & tan limestone, trace marcasite
285	287½	Brown & tan limestone, light gray shale 3, trace marcasite
287½	290	Brown & tan limestone, gray dolomite limestone 80-20, light gray shale 1, trace marcasite McGREGOR - 289.5

Water table: 78.5'

Serial No. 18
Hole No. 11
Collar Elevation: 1008.12'
Depth of Hole: 267.7' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 8/27/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Brown clay, some buff dolomite
15	25	Buff dolomite, trace limonite
25	40	Buff dolomite, few specks limonite
40	70	Buff dolomite
70	85	Brown/buff dolomite, trace limonite
85	90	Brown dolomite, trace marcasite, limonite
90	100	Brown dolomite, few specks marcasite
100	110	Brown dolomite, few specks marcasite
110	115	Brown dolomite, trace tan dolomite, few specks marcasite
115	120	Brown dolomite-trace gray chert, tan dolomite 5, few specks marcasite DRAB 119
120	125	Brown dolomite-tan chert 98-2, trace tan dolomite, few specks marcasite
125	130	Brown dolomite-brown & tan chert 96-4, trace marcasite
130	140	Brown dolomite-brown & tan chert98-2, few specks marcasite
140	150	Brown dolomite-few specks brown chert, trace gray clay, gray dolomite 1, trace marcasite, a speck blende & galena
150	160	Gray brown dolomite-brown & gray chert 97-3, few specks marcasite
160	170	Light brown dolomite-trace brown & gray chert, trace calcite, marcasite 1/10
170	180	Brown dolomite-brown & tan chert 98-2, calcite ½, marcasite 1 a speck blende & galena
180	190	Brown dolomite-brown & tan chert 97-3, marcasite 1, few specks blende & galena.
190	200	Brown dolomite (some marcasite speckled)-gray & tan chert 99-1, calcite 1, marcasite 1 (small recovery)
200	205	Brown dolomite (some marcasite speckled)-gray & tan chert 99-1, calcite 1, marcasite 1

Continued

Lafayette County
~~Sec. R[illegible] 150~~

~~Serial No. 18~~
Hole No. 11 (Cont'd)
Collar Elevation: 1008.12'
Depth of Hole: 267.7' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 8/27/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
205	210	Brown dolomite-gray & tan chert 94-6, trace calcite, marcasite ½
210	215	Brown dolomite-brown & tan chert 98-2, marcasite ½
215	217½	Brown dolomite-few specks calcite, trace marcasite
217½	220	Light brown dolomite-trace calcite, trace marcasite
220	222½	Light brown dolomite-gray dolomite 80-40, calcite 1, marcasite 1/10 GRAY 221½
222½	225	Gray dolomite, few specks calcite, trace marcasite
225	227½	Gray dolomite, marcasite 1/10
227½	230	Gray dolomite-marcasite ½
230	232½	Gray/brown dolomite, calcite ½, marcasite ½
232½	235	Gray/brown dolomite, marcasite 1
235	237½	Gray/brown dolomite, a speck gray clay, few specks calcite, marcasite 1½
237½	240	Pale gray dark/speckled dolomite-gray clay 5, brown dolomite 10, calcite ½, marcasite 1 BLUE 237½
240	242½	Pale gray dark/speckled dolomite-brown dolomite 1, calcite 1/2 trace marcasite
242½	245	Pale gray dark/speckled dolomite-calcite 5, gray clay 10, brown dolomite 5, marcasite ½
245	247½	Light brown fossiliferous limestone, calcite 1, brown clay 10, brown shale 3, marcasite 2½, blende 2% OIL 245
247½	250	Light brown fossiliferous limestone, calcite 8, brown shale 4, gray clay 1, marcasite 2, blende 1½%
250	252½	Light brown fossiliferous limestone, calcite 8, gray clay 10 marcasite 2, blende 2%, small recovery CLAY 252
252½	255	Gray clay-light brown dolomitic limestone 60-21, light borwn fossiliferous limestone, calcite 3, marcasite 3, blende 1%, a speck galena.
255	257½	Dark brown dolomitic limestone, trace calcite, marcasite ½, few specks blende GLASS 254½
257½	260	Gray brown dolomitic limestone-brown dolomite 60-40, trace grayish green & dark brown shale, marcasite 2½, blende ½
260	262½	Gray/brown & gray dolomitic limestone-brown dolomitic limestone 10, green shale 3, trace calcite, marcasite ½, blende 1/10
262½	265	Gray/brown dolomitic limestone, green shale, marcasite 1½, trace blende McGREGOR 258½

Water table: 70'

Depth From	Depth To	Assay ZnS	Assay FeS_2	Assay PbS
245	247½	3.60	6.70	nil
247½	250	3.95	6.90	"
250	252½	2.95	6.70	"
252½	255	2.25	7.70	"
255	257½	0.60	6.20	"
257½	260	0.75	5.40	"

Lafayette County
Sec. R. 6. 150

~~Serial No. 19~~
Hole No. 12
Collar Elevation: 1012.04'
Depth of Hole: 281.0' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 7/3/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Buff clay
10	20	Buff clay & buff dolomite
20	30	Buff dolomite, buff clay 10, a speck marcasite
30	40	Buff dolomite, buff clay 5
40	55	Pale brown/buff dolomite, a speck limonite
55	85	Pale brown/buff dolomite, a speck limonite
85	100	Buff & brown/buff dolomite
100	115	Buff & brown/buff dolomite, few specks limonite
115	120	Buff dolomite-brown dolomite 90-10, few specks brown chert, a speck limonite
120	125	Brown dolomite-brown chert 96-4, few specks limonite
125	130	Brown dolomite-brown & tan chert 95-5, few specks marcasite few specks galena
130	140	Brown dolomite-brown & tan chert 93-7, few specks marcasite
140	150	Brown dolomite-brown & tan chert 95-5, few specks marcasite
150	160	Gray/brown dolomite-gray & tan chert 94-8, few specks marcasite
160	170	Gray/brown dolomite-gray & tan chert 99-1, a speck calcite, few specks marcasite
170	180	Light brown dolomite-gray & tan chert 97-3, trace galena, few specks marcasite
180	190	Light brown dolomite-trace calcite, marcasite ½
190	200	Light brown dolomite-few specks calcite, marcasite 1
200	210	Brown dolomite-gray & brown chert 95-5, calcite ½, marcasite 1½
210	215	Brown dolomite-gray & brown chert 98-2, marcasite 1
215	220	Brown dolomite-gray & brown chert 95-5, marcasite 1
220	222½	Brown marcasite/speckled dolomite, calcite 1, marcasite 8, small recovery
222½	225	Brown marcasite/speckled dolomite, calcite 4, marcasite 4, small recovery
225	227½	Light brown dolomite, a speck chert, marcasite ½, small recovery
227½	230	Light brown dolomite, trace brown chert, marcasite, small recovery GRAY 230
230	232½	Gray dolomite, trace calcite, trace marcasite
232½	235	Gray dolomite, calcite ½, trace marcasite
235	237½	Gray dolomite, trace brown shale, trace marcasite
237½	240	Gray dolomite, trace brown shale, trace marcasite
240	242½	Gray/brown dolomite, a speck calcite, trace marcasite
242½	245	Gray dolomite, trace gray dark/speckled dolomite, calcite ½, marcasite 1 BLUE 245
245	247½	Gray dark/speckled dolomite, trace calcite, marcasite ½, a speck galena
247½	250	Gray dark/speckled dolomite, calcite ½, marcasite ½
250	252½	Calcite-gray dark/speckled dolomite 80-20, marcasite 1½ OIL 252½
252½	255	Calcite-brown & light brown dolomitic limestone 70-30, marcasite ½
255	257½	Brown & light brown fossiliferous dolomitic limestone, calcite 5, marcasite ½, blende 2/10

Continued

Lafayette County

~~Sec. R. 150~~

~~Serial No. 19~~
Hole No. 12 (Cont'd)
Collar Elevation: 1012.04'
Depth of Hole: 281.0' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 7/3/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
257½	260	Brown & light brown fossiliferous dolomitic limestone-trace gray clay, marcasite 1, blende 9/10 CLAY 260
260	262½	Gray/blue clay, brown & tan limestone 15, trace phosphate, calcite 1, trace marcasite & blende, small recovery
262½	265	Dark brown & light brown dolomitic limestone, dark brown shale 15, green & gray shale 5, trace gray clay, marcasite 4, blende ½, (small recovery)
265	267½	Brown & dark brown dolomitic limestone, marcasite 3½, blende 2% (small recovery)
267½	270	Brown & dark brown limestone & dolomitic limestone, trace gray dolomitic limestone, considerable gray dolomite, marcasite 3, blende 1½%, (small recovery)
270	272½	Dark brown to light brown dolomitic limestone, green & brown shale 5, dark brown shale 8, calcite 4, marcasite 8, blende 3½%
272½	275	Brown & light brown limestone, gray/blue shale 10, brown shale 5, marcasite 4, blende 2½%
275	277½	Light gray dolomitic limestone-light brown & brown dolomitic limestone 80-20, gray/blue shale 10, light brown shale 5, marcasite 2, blende 8/10
277½	280	Light gray dolomitic limestone-brown dolomitic limestone 70-30, gray/blue shale 15, light brown shale 3, marcasite 4, blende 2%
280	281	Light gray dolomitic limestone, glassrock & blue shale, marcasite 2, blende 1½% McGREGOR 275 ??

Water table: 74'

Depth From	Depth To	Remarks and Estimated Analyses
		Glassrock & clay beds are caving badly into the bottom of the hole, possibly carrying the values of Blende & marcasite with them. Position of McGregor is not certain.

Depth From	Depth To	Assays ZnS	FeS_2	PbS
257½	260	1.55	4.50	nil.
260	262½	1.00	5.80	"
262½	265	0.50	8.40	"
265	267½	1.20	7.50	"
267½	270	1.05	8.40	"
270	272½	1.15	8.80	"
272½	275	0.75	7.70	"
275	277½	0.75	4.10	"
277½	280	0.95	6.90	"
280	282½	0.80	9.50	

Lafayette County
~~Sec. Re[illegible]150~~

~~Serial No. 20~~
Hole No. 13
Collar Elevation: 1007.71'
Depth of Hole: 269.9' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 7/11/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Buff clay
15	45	Buff dolomite
45	95	Light brown dolomite
95	100	Brown dolomite, a speck marcasite
100	110	Brown dolomite, trace tan dolomite, few specks marcasite
110	115	Brown dolomite, tan dolomite 3, few specks marcasite
115	120	Brown dolomite, a speck tan chert, tan dolomite 1, few specks marcasite DRAB 120
120	125	Brown dolomite-gray & tan chert 95-5, few specks marcasite
125	130	Brown dolomite-gray & tan chert 94-6, few specks marcasite, a speck tan dolomite
130	140	Brown dolomite-gray & tan chert 96-4, few specks marcasite
140	150	Brown dolomite-tan chert 97-3, few specks marcasite
150	160	Light brown & gray dolomite-tan chert 99-1, few specks marcasite
160	170	Brown & gray dolomite, gray shale 2, trace marcasite, thin trace galena
170	180	Light brown dolomite, gray limy shale 15, marcasite 1/10, trace galena, few specks blende (some marcasite/speckled dolomite)
180	185	Small recovery, few coarse cuttings, brown & gray marcasite/speckled dolomite, trace chert, marcasite 1/10
185	190	Light brown dolomite, trace tan chert, few specks calcite, marcasite 1/10, few specks blende & galena
190	195	Small recovery, few coarse cuttings, brown dolomite & gray chert (some marcasite/speckled), trace marcasite
195	200	Light brown dolomite, trace tan chert, marcasite 1/10, few specks blende & galena
200	210	Brown dolomite-gray & tan chert 97-3, trace calcite, marcasite 10, few specks blende & galena
210	215	Brown dolomite-gray & brown chert 94-6, calcite ½, marcasite 9, few specks blende & galena
215	220	Light brown dolomite-brown & gray chert 98-2, trace calcite, marcasite 5
220	222½	Light brown dolomite-trace tan chert, few specks calcite, marcasite 1½
222½	225	Light brown dolomite-trace calcite, marcasite 1 GRAY 225
225	227½	Gray dolomite-trace calcite, marcasite ½
227½	230	Gray dolomite-few specks calcite, marcasite 1/2
230	232½	Gray dolomite & gray/brown dolomite, marcasite ½
232½	235	Very small recovery, coarse cuttings of gray marcasite/speckled dolomite, marcasite 9
235	237½	Small recovery, dark gray-brown marcasite/speckled dolomite, marcasite 1
237½	240	Small recovery, dark gray/brown dolomite, marcasite 7½, (few coarse cuttings)
240	242½	Small recovery, dark gray/brown dolomite-gray dark/speckled dolomite & clay 80-20 BLUE 242

Continued

Lafayette County
~~Sec. [illegible] 150~~

~~Serial No. 20~~
Hole No. 13 (Cont'd)
Collar Elevation: 1007.71'
Depth of Hole: 269.9' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 7/11/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
242½	245	Gray dark/speckled & dark gray/brown dolomite, trace gray clay, marcasite 1½
245	247½	Gray dark/speckled dolomite, marcasite ½
247½	250	Gray dark/speckled dolomite, marcasite 1½, a speck blende
250	252½	Gray dark/speckled dolomite-brown dolomitic limestone 60-40, marcasite 4, blende 1½% OIL 251½
252½	255	Brown & tan dolomitic limestone "blue" ravellings 35, marcasite 3½, blende 1%
255	257½	Brown & tan lime stone-gray clay 80-40, marcasite 10, blende 4% CLAY 256½
257½	260	Brown & tan dolomitic limestone-gray clay 80-20, trace phosphate, considerable "blue" ravellings, marcasite 9, blende 4½% GLASS 259
260	262½	Dark brown dolomitic limestone "Blue" & "Gray" ravellings 40, marcasite 15, blende 2%
262½	265	Gray dolomitic limestone-brown dolomitic limestone 80-20, light gray clay 1, considerable "gray" ravellings, marcasite 6, blende 1 McGREGOR 263
265	266	Gray dolomitic limestone-brown dolomitic limestone 80-20, light gray clay 1, marcasite 8, blende 4/10
266	268	Gray dolomitic limestone-gray clay 96-4, trace calcite "blue" & gray ravellings 50, brown dolomitic limestone 5, marcasite 9, blende ½
268	270	Gray dolomitic limestone- "Blue" & "Gray" ravellings 50, brown dolomitic limestone 3, marcasite 5, blende 2%

Water table: 270'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
250	252½	1.55	9.90	NIL.
252½	255	1.20	10.30	"
255	257½	4.00	10.50	"
257½	260	4.20	8.00	"
260	262½	2.30	10.10	"
262½	265	1.15	8.40	"
265	266	1.20	9.30	"
266	268	1.00	10.30	"
268	270	1.10	12.00	

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 21~~
Hole No. 14
Collar Elevation: 1032.63'
Depth of Hole: 286.0' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 7/19/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	20	Brown & buff clay, some buff dolomite
20	35	Buff dolomite, some buff clay, trace marcasite & limonite
35	50	Buff dolomite, few specks marcasite & limonite
50	65	Pale buff dolomite, a speck marcasite
65	80	Light borwn-buff dolomite, a speck marcasite
80	95	Light brown-buff dolomite, a speck marcasite, a speck limonite
95	110	Pale brown & brown-buff dolomite, a speck limonite
110	125	Pale brown & brown-buff dolomite, a speck limonite
125	140	Pale brown & brown-buff dolomite, trace tan chert, few specks marcasite
140	145	Light brown dolomite, tan chert 7-3, few specks marcasite DRAB - 140
145	150	Light brown dolomite, gray & tan chert 96-4, few specks marcasite
150	160	Light brown dolomite, brown & tan chert 99-1, few specksmarcasite
160	170	Light brown dolomite, tan chert 98-2, a speck marcasite
170	180	Light brown dolomite, gray & tan chert 97-3, few specks marcasite
180	190	Pale brown dolomite, brown & tan chert 98-2, a speck marcasite
190	200	Pale brown dolomite, trace tan chert, few specks marcasite
200	210	Pale brown dolomite, a speck tan chert, thin trace marcasite
210	220	Light brown dolomite, brown & tan chert 97-3, trace marcasite
220	230	Light brown dolomite, brown & tan chert 98-2, thin trace marcasite
230	235	Brown dolomite, brown & tan chert 98-2, thin trace marcasite
235	240	Pale brown dolomite. pale gray chert 99-1, few specks marcasite
240	245	Pale brown dolomite, gray-brown dolomite 80-20, few specks marcasite GRAY - 244
245	250	Pale gray-brown dolomite, few specks marcasite
250	252½	Gray-brown dolomite, thin trace marcasite
252½	255	Gray-brown dolomite, gray dark-speckled dolomite 60-40, few specks marcasite BLUE 254
255	257½	Dark gray-brown speckled dolomite, a speck marcasite
257½	260	Brown & tan fossiliferous dolomite limestone, dark gray-brown dolomite 80-20, few specks marcasite OIL - 258
260	262½	Brown & tan fossiliferous limestone, few specks marcasite
262½	265	Brown & tan limestone, few specks marcasite
265	267½	Tan limestone, dark brown shaly limestone 15, few specks marcasite
267½	270	Light tan & dark brown limestone, few specks marcasite
270	272½	Gray sticky clay, light tan limestone 20, black fossiliferous limestone 10, green shale 10, few specks marcasite
272½	275	Gray sticky clay, brown limestone 20, black limestone 15, few specks marcasite
275	277½	Light brown & gray-brown limestone, dark brown shale 1, green shale 1, few specks marcasite CLAY 270.5
277½	280	Light brown limestone, green shale 1, few specks marcasite GLASS 274.5
280	282½	Light brown limestone, dark brown shale 5, trace green shale, few specks marcasite
282½	285	Gray dolomite limestone, dark brown limestone 80-20, green shale 2, few specks marcasite
285	286	Gray dolomite limestone, coarse cuttings green shale 30, few specks marcasite

Water table:

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 67~~
Hole No. 15
Collar Elevation: 1021.26'
Depth of Hole: 280.2' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Brown clay	
10	15	Buff clay, phosphate 3	
15	20	Dark buff limonite-speckled dolomite, few specks marcasite	
20	30	Buff dolomite, trace limonite (Coarse cuttings)	
30	40	Buff dolomite, a speck limonite & marcasite	
40	70	Buff dolomite	
70	80	Brown-buff dolomite	
80	90	Buff & dark buff dolomite	
90	100	Brown-buff dolomite	
100	110	Buffish-brown dolomite	
110	120	Buffish-brown dolomite, pale brown dolomite 90-10, trace calcite, a speck marcasite	
120	125	Buffish-brown dolomite & brown dolomite, brown, tan & gray chert 98-2, few specks marcasite	DRAB - 123
125	130	Buff dolomite, brown dolomite, gray-brown chert 90-7-3, few specks marcasite	
130	140	Dark buff & brown-buff dolomite, brown chert 60-37-3, few specks marcasite	
140	150	Brown dolomite, buff dolomite, gray-brown chert 60-33-7, few specks marcasite	
150	160	Gray-brown dolomite, gray chert 92-8, trace marcasite	
160	170	Gray-brown dolomite, gray chert 99-1, marcasite 1/10	
170	180	Gray-brown dolomite, gray chert 90-10, marcasite 2/10	
180	190	Brown dolomite, tan & gray chert 85-15, marcasite 4/10	
190	200	Brown dolomite, tan chert 99-1, buff dolomite 1, marcasite 2/10	
200	210	Brown dolomite, tan chert 94-6, marcasite 2/10	
210	220	Brown dolomite, tan & brown chert 88-12, marcasite 1/10	
220	225	Brown dolomite, tan chert 98-2, marcasite 1/10	
225	227½	Brown dolomite, (fine cuttings), marcasite 1/10	GRAY - 229
227½	230	Brown dolomite, gray dolomite 60-40, marcasite 1/10	
230	240	Gray & brown-gray dolomite, trace marcasite	
240	242½	Brown-gray dolomite, trace marcasite	
242½	245	Gray dark-speckled dolomite, brown-gray dolomite 60-40, trace gray clay, marcasite 1/10	BLUE - 243½
245	252½	Gray dark-speckled dolomite, trace calcite, marcasite 1/10	
252½	255	Light brown fossiliferous limestone, trace brown shale, trace marcasite	OIL - 252½
255	260	Brown limestone (few fossils), dark brown shaly limestone 99-1, trace marcasite	
260	262½	Brown limestone, gray fossiliferous limestone 80-20, trace dark brown shaly limestone, trace marcasite	
262½	265	Gray-brown dark-speckled limestone, gray fossiliferous limestone 80-20, trace marcasite	CLAY - 264.5
265	267½	Dark gray fossiliferous limestone & green shale, light brown limestone 4, trace marcasite	
267½	270	Light brown limestone, dark gray fossiliferous limestone 90-10, trace marcasite	GLASS - 267.8

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 67~~
Hole No. 15 (Continued)
Collar Elevation: 1021.26'
Depth of Hole: 280.2' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
270	272½	Brown & tan limestone, trace dark brown shale, marcasite 2/10
272½	275	Brown & tan limestone, trace dark brown shale, trace marcasite
275	277½	Dark brown limestone, dark brown shale 99-1, trace marcasite
277½	280	Gray dolomitic limestone, dark brown limestone 98-2, trace dark brown shale, trace marcasite

McGREGOR - 277½

Water table: 81'

Lafayette County
Sec. Ref. 150

Serial No. 68
Hole No. 16
Collar Elevation: 1015.53'
Depth of Hole: 274.6' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Brown clay
10	15	Buff clay, buff dolomite 60-40, trace phosphate & limonite
15	20	Buff dolomite, buff & brown clay 60-40, trace phosphate
20	30	Buff dolomite (coarse cuttings)
30	40	Buff dolomite, a speck limonite
40	50	Buff dolomite
50	60	Buff dolomite, a speck limonite (coarse cuttings at 55 - 60)
60	70	Buff dolomite, a few specks limonite
70	80	Buff & dark buff dolomite, few specks limonite
80	90	Buff dolomite (Fairly Coarse Cuttings), few specks limonite
90	95	Buff dolomite, a speck limonite
95	100	Brown-buff dolomite
100	115	Brown dolomite, few specks marcasite
115	120	Brown dolomite, brown chert 95-5, marcasite 1/10
120	130	Brown dolomite, brown & gray-brown chert 90-10, marcasite 1/10, few specks galena
130	140	Brown dolomite, brown & tan chert 97-3, few specks marcasite
140	150	Brown dolomite, gray-brown chert 99-1, marcasite 3/10
150	160	Brown-gray dolomite, gray chert 92-8, marcasite 2/10
160	170	Brown-gray dolomite, gray chert 96-4, marcasite 1/10
170	180	Gray-brown dolomite, gray chert 98-2, marcasite 5/10
180	190	Light brown dolomite, tan & gray chert 92-8, marcasite 3/10
190	200	Brown dolomite, trace gray shale, few specks gray chert, marcasite 4/10

DRAB - 117½

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 68~~
Hole No. 16 (Continued)
Collar Elevation: 1015.53'
Depth of Hole: 274.6' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
200	210	Brown dolomite, tan & brown chert 93-7, trace gray shale, marcasite 2/10	
210	215	Brown dolomite, brown & tan chert 82-18, marcasite 1/10	
215	220	Brown dolomite, brown chert 99-1, few specks calcite, trace marcasite	
220	222½	Brown dolomite, brown chert 98-2, few specks calcite, marcasite 1/10	
222½	225	Brown-gray dolomite, trace marcasite	GRAY - 222½
225	230	Brown-gray dolomite, trace gray shale, trace marcasite	
230	235	Gray-brown dolomite, trace gray shale, marcasite 1/10	
235	237½	Brown-gray dolomite, trace green shale, few specks calcite, trace marcasite	
237½	240	Gray dark-speckled dolomite, brown dolomite 95-5, trace calcite, thin trace marcasite	BLUE - 237.6
240	242½	Gray dark-speckled dolomite, calcite 1, marcasite 1/10	
242½	245	Dark gray dark-speckled dolomite, trace calcite, trace marcasite, few specks green shale	OIL - 245.2
245	247½	Brown limestone, gray dark-speckled dolomite, dark brown shaly limestone 90-8-2, trace green shale, marcasite 2/10	
247½	250	Brown & tan fossiliferous limestone, dark brown shaly limestone 99-1, trace green shale, trace marcasite	
250	255	Light brown limestone, dark brown shaly limestone 96-4, marcasite 1/10	
255	257½	Brown & tan limestone, dark brown shaly limestone 98-2, marcasite 1/10	
257½	260	Brown limestone & light gray-brown dark-speckled limestone, dark gray fossiliferous limestone & green shale 80-20, marcasite 1/10	CLAY - 259½
260	262½	Dark gray fossiliferous limestone, brown limestone 60-40, marcasite 2/10	GLASS - 261½
262½	265	Brown limestone, dark gray fossiliferous limestone ravellings 97-3, trace dark brown shale, marcasite 1/10	
265	267½	Brown limestone, trace marcasite, dark gray fossiliferous limestone ravellings 1	
267½	270	Dark brown limestone, chocolate brown shale 98-2, marcasite 1/10 (Coarse cuttings)	
270	272½	Dark brown limestone, chocolate brown shale 98-2, light gray limestone 3, trace marcasite	
272½	274	Gray dolomitic limestone, dark brown limestone 90-10, chocolate brown shale 1, trace marcasite	McGREGOR - 272.8

Note: Driller picked clay bed at 259½ to 263
Nothing unusual about this hole.

Water table: 82'

~~Serial No. 69~~
Hole No. 17
Collar Elevation: 1016.45'
Depth of Hole: 275.5' (Measurement by steel tape)
Location: Henry C. Gray

Lafayette County
~~Sec. Ref. 150~~

Date completed: 1/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	15	Brown clay	
15	20	Buff clay, few coarse chips red residual chert	
20	25	Buff dolomite, buff clay 60-40, trace limonite, specks red chert	
25	30	Buff dolomite, buff & red chert 97-3,	
30	55	Buff dolomite	
55	65	Brown-buff dolomite	
65	80	Buff calcareous dolomite	
80	100	Buff dolomite	
100	110	Rather dark buff dolomite	
110	115	Brown dolomite	
115	120	Brown dolomite, few specks marcasite	
120	125	Brown & dark buff dolomite, brown & gray-brown chert 97-3, few specks marcasite	DRAB - 122½
125	135	Brown dolomite, gray-brown chert 92-8, marcasite 2/10	
135	150	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 3/10	
150	165	Gray-brown dolomite, gray-brown chert 92-8, marcasite 5/10	
165	180	Gray-brown dolomite, gray chert (some slightly marcasite-speckled) 91-9, marcasite 3/10	
180	190	Brown dolomite, tan & gray-brown chert 98-2, marcasite 2/10	
190	195	Very Small Recovery: Brown dolomite, gray chert 96-4, buffish-brown clay 1, marcasite 1	
195	200	Dark brown dolomite, a speck gray chert, marcasite 1/10	
200	210	Dark brown dolomite, gray-brown chert 95-5, marcasite 1/10	
210	215	Brown dolomite, gray-brown chert 88-12, trace marcasite	
215	220	Brown dolomite, trace brown chert, calcite 1, marcasite 2/10	
220	225	Brown-gray dolomite, brown dolomite 80-20, trace marcasite	GRAY - 221
225	230	Brown-gray dolomite, (rather coarse cuttings), marcasite 1/10	
230	232½	No Recovery	
232½	235	Gray-brown dolomite, green shale ½, marcasite 1/10	
235	237½	Brown-gray dolomite, green shale ½, trace marcasite	
237½	240	Gray dark-speckled dolomite, gray dolomite 60-40, trace green shale & gray clay, trace calcite marcasite	BLUE - 238½
240	242½	Gray dark-speckled dolomite, trace green shale, marcasite 1/10	
242½	245	Dark gray dark-speckled dolomite, trace marcasite	
245	247½	Gray dark-speckled dolomite, trace green shale, trace calcite, marcasite 1/10	OIL - 247½
247½	250	Brown & gray-brown fossiliferous limestone, trace marcasite	
250	252½	Brown & tan fossiliferous limestone, green shale, brown shale 97-2-1, trace marcasite	
252½	255	Brown & tan limestone, dark brown shaly limestone 98-2, marcasite 1/10	
255	257½	Brown & tan limestone, dark brown shaly limestone 96-4, trace green shale, marcasite 1/10	
257½	260	Gray fossiliferous limestone, brown limestone 60-40, trace marcasite	
260	262½	Green clay, dark gray fossiliferous limestone, brown limestone 60-20-20, trace marcasite	CLAY - 260½

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 69~~
Hole No. 17 (Continued)
Collar Elevation: 1016.45'
Depth of Hole: 275.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
262½	265	Brown limestone, dark gray fossiliferous limestone 80-20, trace marcasite
265	267½	Brown limestone, dark brown dolomitic limestone 97-3, trace marcasite
267½	270	Brown limestone, chocolate brown shale 99-1, trace marcasite
270	272½	Brown limestone, gray limestone, chocolate brown shale 88-10-2, trace marcasite
272½	275	Gray dolomitic limestone, trace marcasite

McGREGOR - 272.3

Driller's remarks:
0 - 14 Clay
14 - 20 Boulders
120 - 125 First flint
190 - 195 Lost most of cuttings
230 - 232½ Soft streak & strong water - lost cuttings
237½ - 240 Soft
261 - 264 Claybed

6½" hole

Water table: 83½'

Lafayette County
Sec. Ref. 150

Serial No. 70
Hole No. 18
Collar Elevation: 1003.33'
Depth of Hole: 262.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Buffish-brown clay soil
5	10	Buff dolomite (slightly limonite-speckled)
10	15	Buff dolomite, few specks limonite
15	25	Buff dolomite, few specks limonite (Coarse cuttings)
25	35	Buff dolomite, limonite 1/10
35	45	Buff dolomite, trace limonite (Rather Coarse Cuttings)
45	50	Buff dolomite, limonite ½
50	60	Buff dolomite, trace limonite (Rather Coarse Cuttings)
60	70	Buff dolomite, few specks limonite
70	80	Buff dolomite, & brown-buff dolomite
80	90	Buffish-brown dolomite, a speck marcasite

Continued

~~Serial No. 70~~
Hole No. 18 (Continued)
Collar Elevation: 1003.33'
Depth of Hole: 262.5' (Measurement by steel tape)
Location: Henry C. Gray

Lafayette County
~~Sec. Ref. 150~~

Date completed: 1/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
90	100	Buffish-brown dolomite, trace marcasite	
100	105	Brown dolomite, thin trace marcasite	
105	110	Brown dolomite, thin trace marcasite	DRAB - 112
110	115	Small Recovery: Brown dolomite, gray chert 92-8, (few Coarse Cuttings), marcasite 1/10	
115	120	Brown dolomite, gray chert 88-12, marcasite 3/10	
120	130	Brown dolomite, gray-brown chert 93-7, marcasite 5/10	
130	140	Brown dolomite, gray chert 97-3, marcasite 6/10	
140	150	Gray-brown dolomite, gray chert 95-5, marcasite 4/10, a speck blende	
150	160	Gray-brown & gray dolomite, gray chert 92-8, marcasite 2/10, a speck blende	
160	165	Small Recovery: Gray-brown & gray dolomite, trace dark brown shale, marcasite 1, a speck blende	
165	175	Gray-brown & gray dolomite, tan chert 94-6, marcasite 8/10, few specks blende	
175	185	Light brown dolomite, trace tan chert, calcite 3, marcasite 4/10	
185	190	Brown dolomite, a speck tan chert, calcite 1, trace marcasite	
190	195	No Recovery	
195	200	Small Recovery: & Fine Cuttings: Brown dolomite, trace calcite, marcasite 2/10	
200	205	No Recovery	
205	210	Small Recovery: Brown dolomite, trace light brown chert, trace marcasite	
210	215	Small Recovery: Brown dolomite, few specks tan chert, trace marcasite	
215	217½	Small Recovery: Brown dolomite, few specks calcite, marcasite 3/10	
217½	220	Small Recovery: Mostly Fine Cuttings & Few Coarse Cuttings: gray dolomite, marcasite ½	GRAY - 217½
220	222½	Gray dolomite, marcasite 7	
222½	225	No Recovery	
225	227½	Practically no recovery, only 4 coarse pebbles of gray dolomite	
227½	230	Very Small Recovery: Brown-gray dolomite, trace green shale, marcasite ½	
230	232½	Very Small Recovery: Brown-gray dolomite, marcasite 4/10	
232½	235	Practically No Recovery: Only a teaspoonful of brown-gray dolomite	
235	237½	Gray dark-speckled dolomite, marcasite 8	BLUE - 235
237½	240	Gray dark-speckled dolomite, marcasite 7	
240	242½	Gray dark-speckled dolomite, marcasite 6	
242½	245	Gray dark-speckled dolomite, marcasite 2	
245	247½	Gray dark-speckled dolomite, marcasite 2, a speck blende (Coarse Cuttings)	
247½	250	Gray dark-speckled dolomite, few specks brown shale & brown fossiliferous limestone, marcasite 3, few specks blende	
250	252½	Brown fossiliferous d olomitic limestone, considerable ravelling from "BLUE & GRAY" (Coarse Cuttings), marcasite 5, few coarse specks blende, some brown mud washed out of sample easily)	OILROCK-250
252½	255	Same as 250 - 252½ except marcasite 7 & a trace green clay	

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 70~~
Hole No. 18 (Continued)
Collar Elevation: 1003.33'
Depth of Hole: 262.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
255	257½	Same as 250 - 252½ except marcasite 8 & blende 2/10	CLAY ?????
257½	260	Extra Coarse Ravelling From BLUE & GRAY - few specks brown (Glassrock) dolomite, trace green clay, marcasite 5, blende 1/10, trace calcite	
260	262½	Practically entire sample is BLUE & GRAY ravellings, few specks brown dolomite & few specks gray dolomitic limestone (McGREGOR), marcasite 7, blende 2/10	McGREGOR - 261?

Remarks: This hole was very loose & fractured in the lower section. I saw some material in the last cut that I called McGregor; however, with the major portion of the sample ravellings, the McGregor "top" is uncertain.

H.W.D.

Driller's Log

0 - 7	Soil & clay
7 - 15	Yellow lime boulders
15 - 80	Yellow lime
80 - 110	Brown lime
110 - 115	Brown lime, gray & brown flint; ribby - lost most cuttings
115 - 145	Brown lime, gray & brown flint; strong water
145 - 155	Brown & gray lime; strong water - lost most cuttings
155 - 160	Brown lime & gray lime, brown flint
160 - 165	Brown lime & gray lime, strong water, lost most cuttings
165 - 175	Brown lime & gray lime, brown flint & mundic
175 - 185	Brown lime & gray lime, brown flint & lost most cuttings
185 - 190	Brown lime & brown flint, tiff
190 - 195	Lost cuttings; hit opening 190½ to 192 & 194 to 195½
195 - 200	Brown lime & flint; lost most cuttings - ribby
200 - 205	Lost cuttings (broken ground)
205 - 215	Brown lime, lost most cuttings, Ribby
215 - 222½	Brown lime, lost most cuttings (loose broken ground)
222½ - 225	Lost cuttings (broken ground)
225 - 227½	Lost cu ttings (boulders)
227½ - 232½	Brown & gray lime, lost most cuttings, Hard 229 - 235
232½ - 235	Lost cuttings - Hard
235 - 237½	Blue & brown lime & mundic (loose ground)
237½ - 245	Blue lime, mundic, loose ground
245 - 247½	Blue lime & dark brown lime, mundic, loose ground
247½ - 252½	Blue lime & dark brown lime, mundic, loose ground, specks zinc
252½ - 255	Blue lime & dark brown lime, mundic, green clay
255 - 257½	Blue lime & dark brown lime, mundic, gray clay
257½ - 262½	Blue lime & dark brown lime

6½" hole

by L. J. Brown - Driller
Water table: 71'

159

~~Serial No. 71~~
Hole No. 19
Collar Elevation: 976.70'
Depth of Hole: 238.5'
Location: Henry C. Gray

Laf[illegible]tte County
Sec. ~~Ref. 150~~

Date completed: 1/27/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	13	Brown-buff clay	
13	20	Coarse cuttings: Buff dolomite, brown-buff clay 95-5, trace marcasite, a speck blende	
20	35	Coarse cuttings: Buff dolomite, a speck marcasite	
35	45	Coarse cuttings: Buff dolomite	
45	50	Dark buff dolomite	
50	65	Brown-buff dolomite	
65	75	Buff-brown dolomite	
75	80	Dark buff dolomite	
80	85	Buff-brown dolomite, a speck marcasite	
85	90	Brown dolomite, few specks calcite, a speck marcasite	
90	95	Brown dolomite, thin trace marcasite	DRAB - 97½
95	100	Brown dolomite, tan & brown chert 93-7, trace marcasite	
100	110	Brown dolomite, tan & gray chert 95-5, thin trace marcasite	
110	125	Brown dolomite, gray, tan & brown chert 92-8, marcasite 1/10	
125	140	Gray-brown dolomite, gray chert 95-5, marcasite 4/10, thin trace galena (galena at 135-140)	
140	145	Brown dolomite, gray chert 91-9, marcasite 3/10	
145	150	Brown-gray dolomite, marcasite 2/10, few specks blende & galena	
150	160	Brown dolomite, gray & tan chert 94-6, few specks calcite, marcasite 6/10, few specks blende & galena	
160	165	Brown dolomite, tan chert 95-5, marcasite 4, trace galena, few specks blende	
165	170	Brown marcasite-speckled dolomite, trace calcite, marcasite 18, a speck blende	
170	175	Brown dolomite, gray & marcasite-speckled chert 85-15, calcite 1, marcasite 12, trace blende	
175	180	Brown dolomite, gray chert 82-18, calcite 1, marcasite 22	
180	185	Brown dolomite, gray-brown chert 95-5, calcite ½, marcasite 6	
185	190	Brown dolomite, calcite 1, marcasite 5, few specks galena	
190	195	Gray dolomite, brown dolomite 80-20, marcasite 3, thin trace galena	GRAY - 191
195	197½	Gray dolomite, marcasite 1½	
197½	200	Gray & brown-gray dolomite, little brown clay, calcite 2, marcasite 5	
200	202½	Brown-gray & gray marcasite-speckled dolomite, calcite 2, trace brown clay, marcasite 7	
202½	205	Brown-gray dolomite, calcite 2, marcasite 2	
205	207½	Brown-gray dolomite, trace calcite, marcasite 5	
207½	210	Brown-gray dolomite, trace white clay, calcite 2, marcasite 5	
210	212½	Brown-gray dolomite, gray dark-speckled dolomite 50-50, calcite 20, trace light gray clay, marcasite 3	BLUE - 211.25
212½	215	Gray dark-speckled dolomite, calcite 5, marcasite 4	
215	217½	Dark gray dark-speckled dolomite, calcite 1, marcasite 3	
217½	220	Gray dark-speckled dolomite, calcite 3, marcasite 2	
220	222½	Light brown fossiliferous dolomitic limestone, calcite 2, marcasite 4, blende 2	OIL - 220
222½	225	Light brown fossiliferous dolomitic limestone, trace green shale & trace brown shale, trace calcite, marcasite 3, blende 2	

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 71~~
Hole No. 19 (Continued)
Collar Elevation: 976.70'
Depth of Hole: 238.5'
Location: Henry C. Gray

Date completed: 1/27/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
225	227½	Light brown fossiliferous dolomitic limestone, trace brown shale, trace calcite, marcasite 2, blende 3	
227½	230	Light brown fossiliferous limestone, green clay 80-20, trace brown shale, marcasite 1, blende 1	CLAY - 229.5
230	232½	Light gray clay (bentonite)	
232½	235	Dark brown limestone & dolomitic limestone, bentonite 60/40	
235	237½	Gray dolomitic limestone, dark brown limestone & chocolate brown shale 80-20, marcasite 3/10, blende 1/10	McGREGOR - 235.5

Driller's remarks:
Strong flow of water at 155 to 180; lost most of cuts.
Soft ground 212½ to 229
Claybed at 229 to 234
6½ inch hole

Water table: 44'

Depth From	Depth To	Assays ZnS	FeS$_2$	PbS
165	170	0.20	13.30	nil.
170	175	0.20	16.60	nil.
175	180	0.25	21.30	nil.
220	222½	3.95	10.10	nil.
222½	225	2.50	5.20	nil.
225	227½	3.75	5.20	nil.
227½	230	3.30	4.70	nil.

Lafayette County
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~~Serial No. 72~~
Hole No. 20
Collar Elevation: 980.14'
Depth of Hole: 241.0' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Black soil	
6	10	Buff dolomite	
10	30	Buff dolomite (Rather coarse cuttings)	
30	50	Rather dark buff dolomite (Fairly coarse cuttings)	
50	70	Buff dolomite	
70	75	Buffish-brown dolomite & buff dolomite 95-5, a speck marcasite	
75	80	Brown dolomite, buff dolomite, 85-15, a speck marcasite	
80	90	Brown-buff dolomite, few specks calcite, thin trace marcasite	
90	95	Brown dolomite, trace calcite, trace marcasite	
95	100	Brown dolomite, trace gray dolomite, trace calcite, trace marcasite	
100	105	Brown dolomite, gray-brown & brown chert 97-3, trace marcasite	DRAB - 102½
105	110	Brown dolomite, gray & tan chert 93-7, marcasite 1/10	
110	120	Brown dolomite, tan & gray chert 92-8, marcasite 1/10	
120	135	Gray-brown dolomite, gray chert 96-4, marcasite 1/10	
135	150	Gray-brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 2/10	
150	160	Brown dolomite, gray & gray-brown chert 95-5, trace calcite, marcasite 4/10	
160	170	Brown dolomite, gray chert 99-1, calcite, trace buff dolomite, marcasite ½, few specks galena	
170	175	Fine cuttings: Brown dolomite, trace gray chert, trace calcite, marcasite 2	
175	180	Small recovery: Brown dolomite, gray chert & marcasite-speckled chert 93-7, marcasite 3	
180	190	Small recovery: Brown dolomite, marcasite-speckled chert 85-15, marcasite 2	
190	195	Brown dolomite, calcite 1, marcasite 1	
195	200	Brown dolomite, calcite 1, marcasite 1½	
200	202½	Gray dolomite, trace brown dolomite, trace calcite, marcasite 7/10	GRAY - 202½
202½	205	Gray dolomite, few specks calcite, marcasite 4/10	
205	207½	Gray dolomite, calcite 2, marcasite 3/10	
207½	210	Small recovery: Gray-brown dolomite, few specks gray chert, calcite 8, marcasite 4	
210	212½	Small recovery: Gray-brown dolomite, calcite 4, marcasite 8	
212½	215	Gray-brown dolomite, few specks gray chert, calcite 2, marcasite 2	
215	217½	Gray-brown dolomite, calcite 20, marcasite 3	
217½	220	Gray-dark-speckled dolomite, gray-brown dolomite 90-10, calcite 2, marcasite 4	BLUE - 217.7
220	222½	Gray dark-speckled dolomite, calcite 2, marcasite 5	
222½	225	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 90-10, calcite 5, trace brown shale, marcasite 2, blende 1/10	OIL - 224.8
225	227½	Brown fossiliferous dolomitic limestone & brown shaly limestone, marcasite 1½, blende ½	
227½	230	Brown fossiliferous dolomitic limestone, marcasite 1, blende ½	

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 72~~
Hole No. 20 (Continued)
Collar Elevation: 980.14'
Depth of Hole: 241.0' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 1/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
230	232½	Brown fossiliferous dolomitic limestone, gray clay 60-40, trace green shale, trace phosphate marcasite 4/10, blende 2/10	CLAY - 231½
232½	235	Bentonite, brown-gray dolomite 80-20, marcasite 2/10, few specks blende	GLASS - 235
235	237½	Coarse cuttings: Dark brown dolomitic limestone & limestone, marcasite 2/10, few specks blende	
237½	240	Gray dolomitic limestone, dark brown dolomitic limestone 95-5, marcasite 3/10, few specks blende	McGREGOR - 237.6

Driller's remarks:
207½ - 210 Strong flow water
207½ - 215 Lost most cuttings
215 - 217½ Broken ground
222½ - 232½ Soft ground
235 - 237½ Soft ground

Water table: 48'

Lafayette County
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Serial No. 73
Hole No. 21
Collar Elevation: 1009.45'
Depth of Hole: 279.6' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/4/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	15	Brown clay
15	20	Brown clay & buff dolomite 90-10
20	25	Buff dolomite, buff clay 97-3, few specks limonite
25	30	Buff dolomite, buff clay 95-5, few specks limonite
30	45	Buff dolomite
45	55	Coarse cuttings: Dark buff dolomite, thin trace limonite
55	65	Coarse cuttings: Dark buff dolomite
65	70	Dark buff dolomite
70	85	Brown-buff dolomite
85	95	Buffish-brown dolomite
95	100	Buff dolomite
100	110	Brown dolomite, buffish-brown dolomite 90-10, a speck calcite, few specks marcasite
110	125	Brown calcareous dolomite, marcasite 1/10
125	130	Brown calcareous dolomite, trace marcasite

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 73~~
Hole No. 21 (Continued)
Collar Elevation: 1009.45'
Depth of Hole: 279.6' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/4/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
130	135	Brown dolomite, gray chert 99-1, few specks brown chert, trace calcite, marcasite 2/10, few specks galena	DRAB - 134
135	140	Brown dolomite, gray & brown chert 80-20, marcasite 3/10, few specks galena	
140	150	Brown dolomite, gray & brown chert 90-10, marcasite 3/10	
150	160	Brown dolomite, gray chert 95-5, marcasite 2/10	
160	170	Gray-brown dolomite, gray chert 94-6, marcasite 5/10	
170	180	Gray-brown dolomite, few specks gray chert, marcasite 3/10	
180	190	Brown dolomite, gray chert 96-4, a speck calcite, marcasite 4/10	
190	200	Brown dolomite, tan chert 94-6, marcasite 3/10	
200	210	Brown dolomite, trace tan chert, a speck calcite, marcasite 2/10, few specks galena	
210	215	Brown dolomite, few specks calcite, marcasite 1/10, few specks galena	
215	220	Brown dolomite, gray, brown & marcasite-speckled chert 75-25, trace calcite, marcasite 2	
220	225	Brown dolomite, brown & tan chert 88-12, marcasite 1	
225	230	Brown dolomite, brown chert 99-1, trace calcite, marcasite 8/10	
230	235	Brown dolomite, trace calcite, few specks gray dolomite, marcasite 6/10	
235	240	Gray dolomite, marcasite 4/10	GRAY - 235
240	245	Gray & brown-gray dolomite, trace calcite, marcasite 8/10	
245	247½	Gray-brown dolomite, calcite 1, marcasite 6/10	
247½	250	Gray-brown dolomite, calcite 4, few specks green shale, marcasite 2	
250	252½	Gray dark-speckled dolomite, gray clay, gray-brown dolomite 80-5-15, calcite 2, marcasite 1	BLUE - 250.7
252½	255	Gray dark-speckled dolomite, calcite 1, marcasite 9/10	
255	257½	Brown-gray dark-speckled dolomite, calcite 8, marcasite 7	
257½	260	Gray dark-speckled dolomite, calcite 10, marcasite 13	
260	262½	Brown fossiliferous dolomitic limestone, marcasite 25, calcite 1	OIL - 260.0
262½	265	Light brown limestone, some fossils, calcite 5, marcasite 10	
265	267½	Green clay	CLAY - 265.0
267½	270	Bentonite	GLASS - 270.0
270	272½	Brown dolomitic limestone, trace bentonite & gray dark fossiliferous limestone, marcasite 2, a speck blende	
272½	275	Brown & tan limestone, calcite 3, marcasite 2, few specks blende	
275	277½	No recovery, strong flow of water	
277½	280	Coarse cuttings: Gray dark-speckled dolomitic limestone, dark brown dolomite 95-5, few specks chocolate brown shale, marcasite 2/10	McGREGOR - 275 (?)

Water table: 82'

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 73~~
Hole No. 21 (Continued)
Collar Elevation: 1009.45'
Depth of Hole: 279.6' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/4/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
		Driller's remarks:
0	18	Clay
18	100	Yellow lime
100	135	Brown lime
135	235	Brown lime & flint
235	250	Gray lime, soft ground
250	260	Blue lime
260	265	Dark brown lime
265	271	Green & gray clay
271	275	Dark brown lime
275	277½	Lost cuttings, strong water
277½	280	Gray lime, lost most cuttings

6½" hole

Depth From	To	Assays ZnS	FeS_2	PbS
255	257½	0.50	15.50	Nil.
257½	260	0.40	20.90	Nil.
260	262½	0.25	23.20	Nil.
262½	265	0.10	16.60	Nil.

Lafayette County
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Serial No. 74
Hole No. 22
Collar Elevation: 1001.67'
Depth of Hole: 279.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	5	Soil
5	15	Brown-buff clay
15	20	Dark buff dolomite, trace limonite, few specks marcasite & barite
20	25	Buff dolomite, few specks limonite & marcasite
25	40	Buff dolomite, gray-brown dolomite 95-5, few specks marcasite, & limonite
40	70	Buff dolomite
70	80	Buff dolomite, trace limonite, few specks galena
80	85	Coarse cuttings: Buffish-brown dolomite, few specks limonite
85	100	Brown & buffish-brown dolomite, marcasite 2/10
100	110	Brown & buffish-brown dolomite, few specks marcasite
110	120	Brown dolomite, trace calcite, thin trace marcasite

Continued

Lafa[illegible]te County
~~Sec. Ref. 150~~

~~Serial No. 74~~
Hole No. 22 (Continued)
Collar Elevation: 1001.67'
Depth of Hole: 279.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
120	125	Brown calcareous dolomite, marcasite 3/10	
125	130	Brown dolomite, limonite-stained clay 1, marcasite ½	
130	135	Brown dolomite, gray marcasite-speckled chert & brown chert 94-5-1, marcasite 7/10	DRAB - 132½
135	140	Brown dolomite, gray & tan chert 90-10, marcasite 3	
140	150	Brown dolomite, gray-brown & brown chert 96-4, trace calcite, marcasite 2	
150	160	Brown dolomite, gray-brown chert 97-3, marcasite 1½	
160	170	Brown dolomite, gray-brown chert 99-1, marcasite 4/10	
170	180	Brown-brown dolomite, gray chert 97-3, marcasite 8/10, trace blende	
180	190	Brown dolomite, gray chert 95-5, trace calcite, marcasite 1, trace galena, specks blende	
190	200	Brown dolomite, tan chert 96-4, marcasite ½, few specks galena & blende	
200	205	Brown dolomite, gray-brown chert 99-1, few specks calcite, marcasite 3/10	
205	210	Brown marcasite-speckled dolomite, trace gray chert, calcite 5, marcasite 5	
210	220	Brown marcasite-speckled dolomite, gray marcasite-speckled chert 94-6, calcite 2, marcasite 7	
220	225	Brown dolomite, gray & marcasite-speckled chert 75-25, calcite ½, marcasite 4	
225	230	Brown dolomite, brown chert 98-2, marcasite 4	
230	235	Brown dolomite, trace calcite, marcasite 2	
235	237½	Brown-gray & gray dolomite, brown dolomite 95-5, marcasite ½	GRAY-235.1
237½	240	Brown-gray dolomite, calcite ½, marcasite 2½	
240	245	Gray & brown-gray dolomite, calcite 1, marcasite 2	
245	247½	Coarse cuttings: Gray-brown dolomite, marcasite 1, trace calcite	
247½	250	Gray-brown dolomite, calcite 1, marcasite 1	
250	252½	Gray-brown calcareous dolomite, marcasite 8/10, a speck gray dark-speckled dolomite	
252½	255	Gray dark-speckled dolomite, brown dolomite 95-5, marcasite ½	BLUE - 282½
255	257½	Gray dark-speckled dolomite, calcite ½, marcasite 3/10	
257½	260	Gray dark-speckled dolomite, calcite ½, marcasite 1	
260	262½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, calcite 10, marcasite 35, few specks blende	OIL - 260½
262½	265	Dark brown dolomitic limestone, calcite 5, marcasite 30, few specks blende	
265	267½	Brown fossiliferous limestone (dolomitic), calcite 5, marcasite 20, few specks blende	
267½	270	Brown fossiliferous limestone (dolomitic), green clay 60-20, few specks phosphate, calcite 8, marcasite 15, few specks blende & galena	CLAY - 269½
270	272½	Gray clay (bentonite)	
272½	275	Coarse cuttings: Dark brown dolomite, calcite 5, marcasite 4	GLASS - 272½

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 74~~
Hole No. 22 (Continued)
Collar Elevation: 1001.67'
Depth of Hole: 279.5' (Measurement by steel tape)
Location: Henry C. Gray

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
275	277½	Brown limestone, calcite 2, marcasite 9 (probable ravelling) a speck blende & galena
277½	280	Gray dolomitic limestone, brown dolomitic limestone 90-10, marcasite 1

McGREGOR - 277.7

Remarks by driller:
Soft ground 257½ to 270
Otherwise, just an ordinary hole
6½" diameter

Water table: 77'

Depth From	Depth To	ZnS	FeS_2	PbS
260	262½	0.45	47.70	Nil.
262½	265	0.30	25.10	Nil.

Lafayette County
~~Sec. R[illegible] 150~~

~~Serial No. 16~~
Hole No. 1
Collar Elevation: 996.86'
Depth of Hole: 245.5' (Measurement by steel tape)
Location: John O Gray

Date completed: 7/26/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H. Davis & E. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Buff clay, few cuttings, buff dolomite
10	25	Buff clay, buff dolomite 10
25	40	Buff dolomite & clay
40	55	Pale buff dolomite, some buff clay
55	85	Pale buff dolomite
85	90	Pale brown-buff dolomite
90	95	Pale brown-buff dolomite, specks brown chert, trace light brown dolomite
95	100	Light brown & pale buff dolomite, brown & tan chert 96-4, few specks marcasite DRAB - 95
100	105	Pale brown dolomite, brown & tan chert 99-1, few specks marcasite
105	115	Brown dolomite, brown chert 97-3, thin trace marcasite
115	125	Brown dolomite, gray & tan chert 96-4, trace marcasite
125	135	Brown dolomite, brown chert 99-1, brown clay 4, trace marcasite
135	145	Brown dolomite, gray & tan chert 97-3, brown clay 2, tr. marcasite
145	155	Gray-brown dolomite, few specks calcite, thin trace marcasite
155	165	Pale brown dolomite, trace calcite, trace marcasite
165	175	Brown dolomite, gray & brown chert 96-4, trace marcasite
175	185	Brown dolomite, gray & brown chert 95-5, marcasite 1/10
185	190	Brown dolomite, brown & tan chert 98-2, marcasite 1/10
190	195	Light brown dolomite, tan chert 99-1, trace marcasite
195	197½	Pale gray-brown dolomite, trace marcasite GRAY - 195
197½	200	Light gray-brown dolomite, trace marcasite
200	202½	Gray-brown dolomite, thin trace marcasite
202½	205	Gray-brown dolomite, thin trace marcasite
205	207½	Dark gray-brown dolomite, few specks calcite, trace marcasite
207½	210	Dark gray-brown dolomite, trace marcasite
210	212½	Light gray dark-speckled dolomite, trace marcasite BLUE - 210
212½	215	Light gray dark-speckled dolomite, trace marcasite
215	217½	Light gray dark-speckled dolomite, brown dolomite limestone 5, trace marcasite
217½	220	Brown & tan fossiliferous dolomite limestone, few specks marcasite OIL - 217½
220	222½	Brown & tan fossiliferous dolomite limestone, few specks marcasite
222½	225	Brown & tan fossiliferous dolomite limestone, few specks marcasite
225	227½	Brown & tan limestone, trace marcasite, few specks blende
227½	230	Gray fossiliferous limestone, green shale 80-20, trace marcasite, few specks blende CLAY - 229½
230	232½	Green shale & gray clay, black fossiliferous limestone 25, brown & light tan fossiliferous limestone 10, few specks marcasite
232½	235	Brown & tan limestone, black fossiliferous limestone & green shale 20, few specks marcasite, specks blende GLASS 233
235	237½	Brown & tan limestone, green shale 15, thin trace marcasite
237½	240	Brown & tan limestone, green shale 10, few specks marcasite
240	242½	Gray dolomite limestone, brown & tan limestone 60-40, few specks marcasite McGregor - 241
242½	245	Gray dolomite limestone, trace green shale, few specks marcasite

Water table: 39'

Laf[illegible]tte County
~~Sec. Ref. 150~~

~~Serial No. 61~~
Hole No. 2
Collar Elevation: 1035.0'
Depth of Hole: 283.0' (Measurement by steel tape)
Location: John Oliver Gray

Date completed: 12/19/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	15	Brown clay	
15	20	Buff dolomite, trace limonite	
20	35	Buff dolomite, few specks limonite	
35	50	Buff dolomite & few specks limonite & marcasite	
50	90	Buff dolomite	
90	100	Buff dolomite, trace buff clay	
100	110	Rather dark buff dolomite	
110	120	Brown-buff & dark buff dolomite, few specks limonite	
120	125	Dark brown-buff dolomite, few specks limonite	
125	130	Dark brown-buff dolomite, & dark buff dolomite, brown chert 1, buff clay 1, few specks limonite	DRAB 128
130	135	Buff dolomite, white chert 97-3, very thin trace limonite	
135	140	Dark buff dolomite, gray-brown chert 95-5, few specks limonite	
140	145	Dark buff dolomite, dark brown chert 90-10	
145	150	Brown dolomite, buff dolomite 95-5, trace gray chert, a speck dark brown-buff chert, marcasite 2/10	
150	160	Brown dolomite, buff dolomite 80-20, gray chert 1, marcasite 1/10	
160	170	Gray-brown dolomite, gray chert 98-2, trace marcasite	
170	180	Gray-brown dolomite, gray chert 96-4, marcasite 2/10	
180	190	Brown dolomite, gray-brown chert 94-6, marcasite 1/10	
190	200	Brown dolomite, gray-brown chert 98-2, marcasite 2/10	
200	210	Brown dolomite, few specks calcite, marcasite 1/10	
210	220	Brown dolomite, tan & gray-brown chert 80-20, trace marcasite	
220	225	Brown dolomite, tan & brown chert 95-5, trace calcite, trace marcasite	
225	230	Brown dolomite, trace brown & tan chert, few specks calcite, trace marcasite	
230	232½	Brown dolomite, brown-gray dolomite 50-50, few specks chert, thin trace marcasite	GRAY 231.2
232½	235	Brown-gray dolomite, few specks marcasite	
235	240	Brown-gray & gray dolomite, few specks marcasite	
240	245	Gray-brown dolomite, trace marcasite	
245	247½	Gray dark-speckled dolomite, gray-brown dolomite 60-40, gray clay 1, trace marcasite	BLUE 246.0
247½	250	Dark gray dark-speckled dolomite, thin trace marcasite	
250	252½	Dark gray dark-speckled dolomite, trace calcite, thin trace marcasite	
252½	255	Dark gray dark-speckled dolomite, few specks calcite, trace brown shale, thin trace marcasite	
255	257½	Brown & tan fossiliferous limestone, trace brown shale, thin trace marcasite	OIL 255.0
257½	260	Brown & tan fossiliferous limestone, trace brown shale, few specks marcasite	
260	265	Brown limestone, dark brown shaly limestone 97-3, few fossils, trace marcasite	

Continued

Lafa[illegible]te County
~~Sec. Ref. 150~~

~~Serial No.~~ 61
Hole No. 2 (Continued)
Collar Elevation: 1035.0'
Depth of Hole: 283.0' (Measurement by steel tape)
Location: John Oliver Gray

Date completed: 12/19/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
265	267½	Gray dark-speckled limestone, brown limestone 60-40, trace marcasite	
267½	270	Brown limestone & gray dark-speckled limestone, green clay & dark gray fossiliferous limestone 60-40, few specks marcasite	CLAY 269.0
270	272½	Gray clay (BENTONITE), Brown limestone, 40-40, trace green shale & dark gray fossils, trace marcasite	
272½	275	Brown & tan limestone, trace marcasite	GLASS 272.5
275	277½	Dark brown limestone, trace black shale, trace marcasite	
277½	280	Dark brown limestone, gray limestone 90-10, black shale 1, trace marcasite	McGREGOR 279.7
280	282½	Gray dolomitic limestone, few specks marcasite	

Water table: 79½'

Lafaye[illegible] County
~~Sec. Ref. 151~~

~~Serial No. 88~~
Hole No. 1
Collar Elevation: 1026.19'
Depth of Hole: 274.5' (Measurement by steel tape)
Location: Raymond [illegible]. Houtakker

Date completed: 8/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Dark buff clay
10	15	Buff clay
15	20	Buff clay & buff dolomite 15
20	30	Buff dolomite, buff clay 60-40
30	45	Dark buff & buff clay, buff dolomite 60-40, limonite ½
45	60	Buff dolomite, buff clay 2, trace limonite (few coarse cuttings
60	75	Buff dolomite, buff clay (few coarse cuttings)
75	90	Buff limonite stained dolomite, limonite 1
90	105	Buff limonite stained dolomite, limonite 2
105	115	Buff limonite stained dolomite, limonite 8
115	120	Brown-buff dolomite, trace balck shale, limonite ½
120	125	Brown-buff dolomite, specks brown chert, limonite ½, few specks marcasite
125	130	Brown dolomite, brown & tan chert 99-1, trace gary-brown clay, trace limonite, few specks marcasite DRAB - 125
130	135	Brown dolomite, brown & tan chert 95-5, few specks limonite & marcasite
135	140	Brown dolomite, brown & tan chert96-4, few specks marcasite
140	150	Brown dolomite, brown & gray chert 98-2, few specks marcasite
150	160	Brown dolomite, gray & tan chert 94-6, few specks marcasite
160	170	Gray-brown dolomite, gray & tan chert 97-3, trace marcasite
170	180	Gray-brown dolomite, gray & tan chert 95-5, trace gray shale, trace marcasite
180	190	Brown dolomite, brown & tan chert 97-3, few specks marcasite
190	200	Brown dolomite, gray & tan chert 94-6, few specks marcasite
200	210	Brown dolomite, few specks chert, trace brown clay, few specks marcasite
210	215	Brown dolomite, tan chert 95-5, few specks marcasite
215	220	Brown dolomite, tan chert 96-4, few specks marcasite
220	225	Brown dolomite, trace chert, brown clay 3, few specks marcasite
225	230	Brown dolomite, black clay 8, few specks marcasite
230	232½	Gray dolomite, brown dolomite 5, black clay 15, few specks marcasite GRAY - 230
232½	235	Gray dolomite, black clay 10, few specks marcasite
235	237½	Light brown dolomite, brown & black clay 3, few specks marcasite
237½	240	Gray brown dolomite, gray clay 15, trace marcasite
240	242½	Gray brown dolomite, gray clay & shale 10, trace marcasite
242½	245	Gray dark-speckled dolomite, gray shale 5, few specks marcasite BLUE - 242½
245	247½	Gray dark-speckled dolomite, brown dolomite & brown limy shale 60-40, gray shale 3, considerable fossils, trace marcasite OIL - 246½

Continued

Lafayette County
~~Sec. R[illegible] 151~~

~~Serial No. 88~~
Hole No. 1 (Cont'd)
Collar Elevation: 1026.19'
Depth of Hole: 274.5' (Measurement by steel tape)
Location: Raymond B. Houtakker

Date completed: 8/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
247½	250	Brown fossiliferous dolomite limestone, gray dark-speckled dolomite 30, (ravelling) few specks marcasite
250	252½	Brown fossiliferous dolomite limestone, gray dark-speckled dolomite 15 (ravelling), gray shale 5, few specks marcasite
252½	255	Tan limestone, dark brown shaly limestone 10, trace marcasite, few specks blende
255	257½	Brown & tan limestone, dark brown limy shale 20, few specks calcite, trace marcasite, specks blende
257½	260	Green shale & gray clay, phosphate 1, tan limestone 5, trace marcasite — CLAY - 257½
260	262½	Small recovery: Tan dolomite limestone, gray clay 60-40, trace phosphate, brown & black clay 3, trace marcasite — GLASS - 261
262½	265	Brown & tan dolomite limestone, gray-brown clay & shale 12, brown shale 4, green shale 3, marcasite ½
265	267½	Brown & tan dolomite limestone, blue-gray shale 5, gray clay 5, marcasite ½
267½	270	Brown & tan dolomite limestone, blue-gray shale 3, gray clay 1, green shale 8, marcasite 1
270	272½	Brown & tan dolomite limestone, brown & gray mottled shale 20, gray shale & clay 25, blue-gray shale 5, gray dolomite limestone 1, marcasite 1 — McGREGOR -272½
272½	275	Brown dolomite limestone, green shale 30, gray dolomite 15, brown shale 1, marcasite ½

Water table: 68.5'

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 89~~
Hole No. 2
Cellar Elevation: 1001.31'
Depth of Hole: 241.6' (Measurement by steel tape)
Location: R. B. Houtakker

Date completed: 9/9/52
Drilled by: Eagle-Picher, DMA
Logged by: Eastmoore & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	12	Soil & clay	
12	15	Buff dolomite, gray clay 3, green shale 2, trace marcasite	
15	30	Buff dolomite, green shale 3, marcasite trace	
30	75	Buff dolomite	
75	85	Buff dolomite, trace calcite	
85	90	Buff & brown dolomite, trace brown chert, marcasite trace	DRAB - 87
90	100	Buff & brown dolomite, brown chert 99-1, marcasite trace	
100	110	Brown & light brown dolomite, trace brown chert	
110	120	Brown dolomite, gray & brown chert 98-2, marcasite trace	
120	130	Brown & brown-buff dolomite, gray chert 96-4, marcasite 1/10	
130	140	Brown & brown-buff dolomite, gray & brown chert 97-3, marcasite trace	
140	150	Brown & buff-gray dolomite, gray chert 99-1	
150	160	Brown & buff-gray dolomite, gray & light gray chert 97-3, gray clay 1, marcasite trace	
160	170	Brown & buff-gray dolomite, light gray & gray chert 99-1, marcasite trace	
170	180	Brown & buff-gray dolomite, brown & gray chert 96-4, marcasite trace	
180	185	Brown & light brown dolomite, gray chert 98-2	
185	190	Brown & buff-gray dolomite, trace brown chert, trace gray dolomite, trace marcasite	GRAY - 187
190	192½	Gray dolomite, trace marcasite-speckled gray dolomite, marcasite trace	
192½	195	Gray & buff gray dolomite	
195	197½	Gray dolomite, trace calcite, trace marcasite	
197½	200	Gray & brown dolomite, trace marcasite	
200	202½	Light brown & gray dolomite, trace marcasite	
202½	205	Light brown & gray dolomite, gray dark-speckled dolomite 40, calcite trace, marcasite trace	BLUE - 204
205	207½	Dark-speckled gray & light gray dolomite, trace green clay, marcasite trace	
207½	210	Dark-speckled gray dolomite	
210	212½	Dark-speckled gray dolomite, marcasite trace	
212½	215	Brown & gray fossiliferous limy dolomite, marcasite trace galena specks	OIL - 212.5
215	217½	Light brown fossiliferous dolomite, marcasite trace	
217½	220	Light brown fossiliferous dolomite, trace brown limy shale, calcite trace, marcasite trace	
220	222½	Light brown dolomitic limestone, brown limy shale 2, trace calcite, trace marcasite	
222½	225	Light brown dolomitic limestone, brown limy shale 2, gray clay & shale 20	CLAY - 224.5
225	227½	Gray clay, light brown fossiliferous limy dolomite 20, trace black fossiliferous shale	
227½	230	Gray clay, brown fossiliferous dolomitic limestone 20	GLASS - 229.5
230	232½	Brown dolomitic limestone, trace tan limestone, trace gray clay, marcasite trace	
232½	235	Brown dolomitic limestone, trace tan limestone, trace marcasite	
235	237½	Brown dolomitic limestone, trace tan limestone, trace marcasite, trace gray greasy shale	
237½	240	Gray fossiliferous limestone, green shale, & gray greasy shale 2, brown limestone 20, marcasite trace	McGREGOR - 238

Water table: ~~49'~~ 29

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 27~~
Hole No. 4
Collar Elevation: 993.24'
Depth of Hole: 243.0' (Measurement by steel tape)
Location: Raymond B. Houtakker

Date completed: 9/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	20	Brown clay (solid at 17')
20	25	Buff dolomite, gray dark-speckled dolomite 95-5, few specks marcasite, few specks green shale, trace limonite
25	35	Buff dolomite, few specks limonite
35	50	Buff dolomite
50	60	Buff dolomite, some buff clay
60	70	Buff dolomite, trace dark buff clay
70	75	Brown-buff dolomite, trace dark buff clay
75	80	Buff limonite-speckled dolomite, trace calcite
80	85	Buffish-brown dolomite (calcareous), gray dolomite 2, trace brown chert, specks marcasite
85	90	Buff-brown dolomite, brown & tan chert 90-10, few specks limonite **DRAB** - 85
90	100	Dark buff dolomite, brown & tan chert 96-4, trace brown clay, trace limonite
100	110	Buff dolomite, brown-gray dolomite, brown chert 70-22-8, thin trace limonite
110	120	Dark brown-buff dolomite, brown chert 94-6, trace gray dolomite, trace tan chert, few specks limonite
120	130	Gray dolomite, buff dolomite 70-30, marcasite-speckled chert 1, trace brown chert, trace limonite, marcasite 1/10
130	135	Brown-gray dolomite, gray chert 95-5, buff dolomite 4, marcasite & limonite 2/10
135	140	Buff dolomite (coarse cuttings), gray dolomite 90-10, trace gray chert, limonite 4, trace dark gray-brown cave filling clay, few specks marcasite
140	145	Brown-gray dolomite, gray chert 97-3, trace tan chert, marcasite 1/10, trace buff dolomitic ravellings (Driller reports formation as being ribby)
145	150	Light brown dolomite, trace tan chert & trace marcasite-speckled chert, marcasite 1/10
150	160	Light brown dolomite, trace tan chert, marcasite 1/10
160	170	Brown dolomite, tan & gray chert 99-1, marcasite 2/10
170	180	Brown dolomite, tan chert 92-8, trace calcite, marcasite 2/10
180	185	Brown dolomite, trace tan chert, trace calcite, trace marcasite
185	190	Brown dolomite, gray dolomite 60-40, trace calcite, trace marcasite **GRAY** - 188
190	195	Gray dolomite, thin trace marcasite
195	197½	Gray dolomite, thin trace marcasite
197½	200	Brown-gray dolomite, thin trace marcasite
200	202½	Brown-gray calcareous dolomite, trace gray clay, thin trace marcasite
202½	205	Brown-gray dolomite, gray dark-speckled dolomite 80-20, gray clay 1, marcasite 1/10 **BLUE** - 204½
205	207½	Gray dolomite with few dark specks, trace calcite, marcasite 1/10
207½	210	Gray dolomite with few dark specks, calcite 1, marcasite 2/10
210	212½	Brown & tan limestone, gray dark-speckled dolomite 60-40, dark brown dolomitic limestone 3, marcasite 1/10 **OIL** - 211

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 27~~
Hole No. 4 (Continued)
Collar Elevation: 993.24'
Depth of Hole: 243.0' (Measurement by steel tape)
Location: Raymond B. Houtakker

Date completed: 9/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
212½	215	Light tan fossiliferous limestone, trace marcasite	
215	220	Brown & tan fossiliferous limestone, dark brown shaly limestone 95-5, marcasite 1/10	
220	222½	Brown & tan limestone, dark brown shaly limestone 2, trace marcasite	
222½	225	Gray fossiliferous limestone, tan limestone 60-40, trace marcasite	
225	227½	Gray & dark gray fossiliferous limestone, trace green shale, trace marcasite	CLAY - 225
227½	230	Gray & dark gray fossiliferous limestone, bentonite 60-40, marcasite 3/10	GLASS - 230
230	232½	Brown & tan limestone, trace brown dolomite, marcasite 1/10	
232½	235	Brown & tan limestone, marcasite 1/10	
235	237½	Brown & tan limestone, trace gray dark-speckled limestone, some green shale & bentonite sloughing from clay-bed, marcasite 1/10	
237½	240	Gray dolomitic limestone, trace marcasite	McGREGOR - 237½
240	243	Gray dolomitic limestone, few specks marcasite	

Water table: 37'

Lafayette County
Sec. R[illegible] 149

Serial No. 192
Hole No. 2
Collar Elevation: 923.21'
Depth of Hole: 162.6' (Measurement by steel tape)
Location: Calvert Estate, Tract # 2

Date completed: 6/19/52
Drilled by: Eagle-Picher D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Buff clay
10	20	Buff sandy clay
20	25	Buff sandy clay, trace brown and tan chert DRAB - 20
25	30	Tan dolomite, white chert 98-2, trace marcasite
30	40	Tan dolomite, white chert 96-4, marcasite & limonite ½
40	50	Light brown dolomite, light brown chert 99-1, marcasite 1/10
50	60	Pale gray dolomite, white chert 94-6, trace marcasite
60	70	Light brown dolomite, gray & tan chert 98-2, trace marcasite
70	75	Brown dolomite, gray and tan chert 99-1, trace marcasite
75	80	Brown dolomite, tan chert 97-3, trace marcasite
80	90	Light brown dolomite, trace chert, trace marcasite
90	100	Light brown dolomite, gray & tan chert 98-2, trace marcasite
100	105	Brown dolomite, brown & gray chert 97-3, trace marcasite
105	110	Brown dolomite, borwn & tan chert 97-3, trace marcasite
110	115	Gray-brown dolomite, brown dolomite 80-20, trace marcasite GRAY - 111
115	117½	Gray dolomite, few specks marcasite
117½	120	Gray-brown dolomite, a speck calcite, few specks marcasite
120	122½	Gray dolomite, trace calcite, thin trace marcasite
122½	125	Dark gray-brown dolomite, few specks marcasite
125	127½	Gray-brown dolomite, gray dark-speckled dolomite 60-40, few specks marcasite BLUE - 126.5
127½	130	Gray dark-speckled dolomite, marcasite 1/10
130	132½	Gray-brown dark-speckled dolomite, trace calcite, thin trace marcasite
132½	135	Brown & tan fossiliferous limestone, gray dark-speckled dolomite 80-20, marcasite 1/10 OIL - 133
135	137½	Brown & tan fossiliferous limestone, few sepcks marcasite
137½	140	Brown & tan fossiliferous limestone, few specks marcasite
140	142½	Brown & tan fossiliferous limestone, dark borwn shale 5, trace marcasite
142½	145	Brown & tan fossiliferous limestone, dark brown shale 3, trace marcasite
145	147½	Gray-brown dark-speckled fossiliferous limestone, brown & tan limestone 20, trace marcasite
147½	150	Gray-brown dark-speckled fossiliferous limestone, brown & tan limestone 35, few specks marcasite
150	150½	Gray-brown & tan limestone, black fossiliferous limestone 50-50, trace green shale, marcasite 1/10 CLAY - 150
150½	152½	Dark brown dolomite limestone, tan dark-speckled shale limestone 50-50, green shale 1, trace marcasite GLASS - 150.5

Continued

Lafayette County
~~Sec. R~~ 149

~~Serial No. 192~~
Hole No. 2 (Cont'd)
Collar Elevation: 923.21'
Depth of Hole: 162.6' (Measurement by steel tape)
Location: Calvert Estate, Tract # 2

Date completed: 6/19/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
152	155	Dark brown dolomite limestone, tan dark-speckled shale limestone 60-40, green shale 3, trace marcasite
155	157½	Brown & light brown limestone, green shale 1, dark brown shale 4, trace marcasite
157½	160	Brown & light brown limestone, few specks gray shale limestone, trace green shale & brown shale, few specks marcasite
160	161	Brown dolomite limestone, gray dolomite limestone 60-40, brown shale 3, green shale 1, trace marcasite

McGREGOR - 160.5
Water table: 6'

Serial No. 193
Hole No. 3
Collar Elevation: 936.60'
Depth of Hole: 176.5' (Measurement by steel tape)
Location: Calvert Estate, Tract # 2

Date completed: 6/26/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	20	Brown sandy clay
20	25	Brown dolomite, few specks brown chert
25	35	Brown dolomite, gray & brown chert 98-2, few specks marcasite, a speck galena, brown clay 30 DRAB - 25
35	45	Brown dolomite, gray & brown chert 96-4, trace marcasite, few specks galena
45	55	Brown dolomite, gray & brown chert 99-1, trace marcasite, few specks galena
55	65	Light brown dolomite, gray & tan chert 90-10, trace marcasite
65	75	Light brown dolomite, gray & tan chert 95-5, trace marcasite
75	85	Light brown dolomite, gray dolomite 94-6, trace marcasite
85	95	Brown dolomite, a speck chert, trace marcasite
95	100	Brown dolomite, few specks tan chert, trace marcasite
100	105	Brown dolomite, gray & tan chert 97-3, trace marcasite
105	110	Brown dolomite, brown & gray chert 90-10, trace marcasite
110	115	Brown dolomite, gray & tan chert 95-5, thin trace marcasite
115	120	Brown dolomite, tan chert 99-1, thin trace marcasite
120	125	Light brown dolomite, thin trace marcasite
125	130	Gray dolomite, brown dolomite 80-20, thin trace marcasite GRAY - 126
130	132½	Gray-brown dolomite, a speck calcite, few specks marcasite
132½	135	Gray-brown dolomite, few specks marcasite
135	137½	Gray-brown dolomite, few specks marcasite
137½	140	Gray-brown dolomite, gray dark-speckled dolomite 60-40, calcite ½, trace gray clay, trace marcasite BLUE - 139

Continued

Lafayette County
~~Sec. Re~~ ~~149~~

~~Serial No. 193~~
Hole No. 3 (Cont'd)
Collar Elevation: 936.60'
Depth of Hole: 176.5' (Measurement by steel tape)
Location: Calvert Estate, Tract #2

Date completed: 6/26/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
140	142½	Gray dark-speckled dolomite, trace calcite, trace marcasite
142½	145	Gray & gray-brown dark-speckled dolomite, few specks marcasite
145	147½	Gray dark-speckled dolomite, trace gray clay, few specks marcasite
147½	150	Light brown & tan limestone, few specks marcasite OIL - 147.5
150	152½	Light brown & tan limestone, dark brown limy shale 10, few specks marcasite
152½	155	Brown & tan limestone, dark brown limy shale 15, few specks marcasite
155	157½	Brown & tan limestone, dark brown shaly limestone 5, few specks marcasite
157½	160	Brown & tan limestone, gray-brown fossiliferous limestone 20, few specks marcasite
160	162½	Black fossiliferous limestone & green shale, brown fossiliferous limestone, brown & tan limestone 40-40-20, few specks marcasite CLAY -161
162½	165	Brown & tan limestone, trace dark brown shale, few specks marcasite GLASS - 162
165	167½	Brown & tan limestone, trace dark brown shale, trace marcasite
167½	170	Brown & tan limestone & brown dolomite limestone, dark brown shale 2, few specks marcasite
170	172½	Brown & tan limestone, dark brown shale 4, few specks marcasite
172½	175	Gray dolomite limestone, green shale 2, brown & dark brown limestone 5, few specks marcasite McGREGOR - 172.5

Water table: 51'

- -

Lafayette County
~~Sec. R[illegible] 149~~

~~Serial No. 194~~
Hole No. 4
Collar Elevation: 948.34'
Depth of Hole: 196.2' (Measurement by steel tape)
Location: Calvert Estate, Tract # 2

Date completed: 7/1/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	20	Buff sandy clay, few specks limonite
20	30	Buff dolomite, buff clay 40-60, few specks limonite.
30	40	Buff dolomite, buff clay 30-70, few specks limonite, a speck Galena.
40	50	Buff dolomite, buff clay 60-40, trace limonite, a speck Galena.
50	55	Buff dolomite, buff clay 90-1, trace limonite.
55	60	Light brown buff dolomite, brown & tan chert 92-8, trace limonite. DRAB 55
60	70	Light brown dolomite, brown & tan chert 95-5, trace limonite.
70	80	Light brown dolomite, brown & tan chert 98-2, trace brown clay, trace limonite.
80	90	Light brown dolomite, brown dolomite 99-1, trace limonite.
90	100	Light brown dolomite, brown & tan chert 92-0, dark brown shallydolomite 10, trace limonite.
100	110	Light brown dolomite, brown & tan chert 99-1, dark brown shaley dolomite 5, trace limonite.
110	120	Light brown dolomite, light brown chert 97-3, trace dark brown shaley dolomite, few specks limonite.
120	130	Light brown dolomite, brown & tan chert 98-2, limonite & marcasite ½.
130	135	Brown dolomite, trace brown & tan chert, limonite & marcasite ½.
135	140	Brown dolomite, dark brown & gray chert (marcasite specks) 80-20.
140	145	Light brown dolomite, tan chert 99-1, marcasite ½, limonite 3
145	150	Gray dolomite, light brown dolomite 60-40, marcasite 2, limonite 5 GRAY 145
150	155	Gray dolomite & light brown & buff dolomite, marcasite 1½ limonite 3
155	157½	Gray dolomite & light brown & buff dolomite, marcasite 1 limonite 1
157½	160	Gray brown & buff dolomite, marcasite 1½, limonite 1
160	162½	Dark brown dolomite & gray clay, marcasite 1½ BLUE 160
162½	165	Gray dark specks dolomite & clay, marcasite 1
165	167½	Gray dark specks dolomite & clay, & some brown dolomite, marcasite 1
167½	170	Brown & tan fossiliferous dolomite limestone, dark brown shale 10, marcasite ½ OIL 167.5
170	172½	Tan fossiliferous limestone, dark brown shale 5, marcasite 1
172½	175	Tan fossiliferous limestone, dark brown shale 8, marcasite 1½, few specks Galena.
175	177½	Green shale & gray clay, tan limestone 80-20, trace phosphate, marcasite 1½ CLAY 175.5
177½	180	Brown & light brown dolomite limestone, green shale 1, calcite 4, marcasite 3 GLASS 177.5

Continued

Lafaye[illegible] County

~~Sec. Ref. 149~~

~~Serial No. 194~~
Hole No. 4 (Cont'd)
Collar Elevation: 948.34'
Depth of Hole: 196.2' (Measurement by steel tape)
Location: Calvert Estate, Tract # 2

Date completed: 7/1/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
180	182½	Small recovery brown dolomite limestone & gray brown shale, marcasite 10
182½	185	Gray dolomite limestone, brown dolomite limestone & dark brown shale 15, marcasite 1 McGREGOR 182.5
185	187½	Gray dolomite limestone, brown dolomite limestone & dark brown shale 5, marcasite ½, green shale 1
187½	190	Gray dolomite, limestone, brown dolomite limestone & dark brown shale 10, trace green shale, marcasite 1/10.
190	192½	Gray dolomite limestone, dark brown shale 15, green shale 1, trace marcasite.
192½	195	Gray dolomite limestone, dark brown shale 5, green shale ½, trace marcasite.

Water table: 67'

Serial No. 195
Hole No. 5
Collar Elevation: 942.07'
Depth of Hole: 184.6' (Measurement by steel tape)
Location: Calvert Estate Tract # 2

Date completed: 7/11/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil & brown clay
5	20	Buff dolomite & buff clay
20	25	Buff dolomite, buff clay 10
25	40	Buff dolomite
40	45	Buff dolomite buff & tan chert 99-1 DRAB 44
45	50	Buff dolomite-buff & tan chert 97-3, few specks limonite & marcasite
50	60	Buff dolomite-brown & buff chert 92-8, limonite & marcasite ½
60	70	Light brown dolomite-dark brown & brown chert 95-5, limonite & marcasite 3/10
70	80	Light brown dolomite-gray & tan chert 96-4, limonite & marcasite 1
80	90	Brown buff dolomite-brown & tan chert 94-6, limonite & marcasite ½
90	100	Pale dolomite-trace tan chert, light brown clay 5, limonite & marcasite ½
100	110	Buff dolomite-trace tan chert, light brown clay 1, trace limonite & marcasite
110	115	Buff limonite stained dolomite, trace tan chert, trace brown clay, trace limonite & marcasite
115	120	Pale brown dolomite-brown chert 99-1, brown clay ½, trace limonite & marcasite

Continued

Lafayette County
~~Sec. R[illegible] 149~~

~~Serial No. 195~~
Hole No. 5 (Cont'd)
Collar Elevation: 942.07'
Depth of Hole: 184.6' (Measurement by steel tape)
Location: Calvert Estate Tract # 2

Date completed: 7/11/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
120	125	Buff limonite stained dolomite-brown chert 97-3, few specks limonite
125	130	Brown buff dolomite-brown & gray chert 85-15, trace limonite, marcasite 1
130	135	Light brown to brown dolomite-brown & gray chert 94-6, marcasite 2
135	137½	Buff to brown dolomite-borwn & buffchert 93-7, marcasite ½
137½	140	Buff dolomite, gray brown dolomite 10, brown chert 2, marcasite 1½
140	142½	Brown/buff dolomite & brown dolomite-brown & tan chert 97-3, marcasite 2
142½	145	Pale buff & gray/brown dolomite, trace chert, gray clay 3, marcasite ½
145	147½	Red clay & pale buff dolomite, marcasite ½
147½	152½	Pale buff dolomite, trace brown dolomite, gray/brown dolomite, gray clay, brown clay, marcasite ½
152½	155	Pale brown dolomite, few specks gray dolomite, gray clay 1, brown clay 1, marcasite 1, red mud 70%
155	157½	Light brown dolomite, gray clay 15, brown clay 3, marcasite ½, red mud 50% — BLUE 156-157½
157½	160	Light brown dolomite (limy?) brown clay 10, trace gray clay, marcasite 1, 40% mud
160	162½	Light brown dolomite (limy?) brown clay 20, marcasite 1, 40% mud
162½	165	Light brown flaky limestone, brown clay 1, marcasite ½, 40% red mud — OIL 162½ - 165
165	167½	Light brown flaky limestone, brown clay 4, marcasite ½, 40% red mud
167½	170	Light brown limestone (some fossils) light gray bentonite clay 4, trace marcasite, 90% mud — CLAY (in this run)
170	172½	Light brown limestone, a speck brown dolomitic limestone ? brown clay 3, trace marcasite, 80% mud
172½	175	Light brown dolomitic limestone, trace light brown limestone, trace light brown & dark brown dolomitic limestone & brown shale, marcasite 3, a speck galena
175	177½	Light brown to tan flaky limestone, brown shale 5, a speck gray clay, marcasite ½ — GLASS 170-172½
177½	180	Buff limonite/stained dolomite & clay, some light brown limestone, dark brown shale & bentonite clay, trace gray/brown dolomite, marcasite ½
180	182½	Gray dolomitic limestone & light brown/buff dolomitic limestone, marcasite & limonite 1 — McGREGOR 181½
182½	185	Gray dolomitic limestone & light brown/buff dolomitic limestone, marcasite & limonite ½

Water table: 63'

Lafayette County
~~Sec. R~~ 150

~~Serial No. 12~~
Hole No. 24
Collar Elevation: 974.97'
Depth of Hole: 240.7' (Measurement by steel tape)
Location: Calvert Estate, Tract # 1

Date completed: 7/19/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff clay
10	25	Buff clay, some buff dolomite, few specks limonite
25	35	Buff clay & buff dolomite, few specks limonite
35	45	Buff dolomite & buff clay, few specks limonite
45	60	Buff dolomite, few specks limonite
60	75	Buff dolomite
75	80	Buff dolomite & brown dolomite, gray & brown chert 97-3, a speck marcasite & limonite DRAB - 76
80	85	Buff dolomite, tan chert 98-2, a speck limonite & marcasite
85	95	Buff dolomite, brown & tan chert 97-3, a speck marcasite & limonite
95	105	Buff & brown dolomite, gray & tan chert 96-4, a speck marcasite & limonite
105	115	Brown & buff dolomite, gray & brown chert 94-6, few specks marcasite
115	125	Brown-buff dolomite, gray & brown chert 95-5, few specks marcasite
125	135	Brown-buff dolomite, brown & tan chert 94-6, few specks marcasite
135	145	Brown-buff dolomite, brown & tan chert 97-3, a speck marcasite
145	150	Light brown dolomite, brown & tan chert 97-3, a speck marcasite
150	152½	Brown dolomite, gray & tan chert 95-5, a speck marcasite
152½	155	Light brown dolomite, pale brown chert 99-1, a speck marcasite
155	165	Light brown dolomite, trace tan chert, few specks marcasite
165	175	Light brown dolomite, pale tan chert 95-5, few specks marcasite
175	180	Light brown dolomite, pale tan chert 99-1, a speck marcasite
180	182½	Light gray-brown dolomite, a speck marcasite GRAY - 180
182½	185	Light gray-brown dolomite, trace gray shale, trace marcasite
185	187½	Light brown dolomite, few specks marcasite
187½	190	Gray-brown & gray dolomite (few coarse cuttings), few specks marcasite
190	192½	Gray dolomite, trace marcasite
192½	195	Gray dolomite, thin trace marcasite
195	197½	Light brown dolomite, thin trace marcasite
197½	200	Gray dark-speckled dolomite, light brown dolomite 60-40, few specks marcasite BLUE - 198.5
200	202½	Gray dark-speckled dolomite, trace buff dolomite, few specks marcasite
202½	205	Light gray-brown & dark-speckled dolomite, few specks marcasite
205	207½	Gray dark-speckled dolomite, few specks marcasite

Continued

Lafayette County
~~Sec. R[illegible] 150~~

~~Serial No. 12~~
Hole No. 24 (Cont'd)
Collar Elevation: 974.97'
Depth of Hole: 240.7' (Measurement by steel tape)
Location: Calvert Estate, Tract # 1

Date completed: 7/19/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: J. E. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
207½	210	Brown & tan fossiliferous limestone, few specks marcasite OIL - 207.5
210	212½	Brown & tan fossiliferous limestone, trace dark brown shale, a speck marcasite
212½	215	Brown & tan fossiliferous limestone, dark brown shale 1, a speck marcasite
215	217½	Brown & tan fossiliferous limestone, dark brown shale 3
217½	220	Brown & tan fossiliferous limestone, trace light gray fossiliferous limestone & tan limestone
220	222½	Light brown & gray fossiliferous limestone, black fossiliferous limestone 80-20, trace green shale CLAY - 222
222½	225	Brown & tan limestone, green shale 1, few specks marcasite
225	227½	Brown & tan limestone, trace green shale, trace brown shale
227½	230	Brown & tan limestone, green shale 1, brown shale 3
230	232½	Brown & tan limestone, brown shale 7, trace green shale, a speck marcasite
232½	235	Light gray dolomite limestone, trace green shale, a speck marcasite
235	237½	Gray-brown dolomite limestone
237½	240	Light brown dolomite limestone, few specks calcite Water table: 47'

Serial No. 13
Hole No. 25
Collar Elevation: 969.56'
Depth of Hole: 225.3' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 7/24/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H. Davis & E Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Brown & buff clay
10	25	Dark buff clay & some buff dolomite
25	40	Buff dolomite, buff clay 50-50
40	50	Buff dolomite, buff clay 70-30
50	60	Buff dolomite, trace galena, speck limonite
60	70	Buff dolomite, trace galena, speck limonite
70	75	Buff dolomite, few specks limonite
75	80	Buff & light brown dolomite, few specks tan chert, few specks marcasite
80	85	Buff & light brown dolomite, brown tan chert 97-3, few specks marcasite
85	90	Gray-brown dolomite, gray & tan chert 98-2, thin trace marcasite, specks galena & blende
90	95	Gray-brown dolomite, gray & tan chert 94-6, marcasite ½, galena 3/10, few specks blends
95	100	Brown dolomite, gray & tan chert 97-3, marcasite ½, galena 2/10, specks blende

Continued

Lafayette County
~~Sec. R~~ 150

~~Serial No. 13~~
Hole No. 25 (Cont'd)
Collar Elevation: 969.56'
Depth of Hole: 225.3' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 7/24/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H. Davis & E. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
100	110	Brown dolomite, gray & tan chert 98-2, marcasite ½, trace galena, specks blende
110	120	Brown dolomite, gray & tan chert 98-2, trace marcasite, specks galena
120	130	Brown dolomite, gray & tan chert 97-3, trace marcasite, few specks galena
130	140	Gray-brown dolomite, brown shale 4, marcasite 1, few specks galena
140	150	Gray-brown dolomite, brown tan chert 99-1, brown shale 1, marcasite 1½, specks galena
150	155	Brown dolomite, trace brown shale & chert, marcasite 4
155	160	Small recovery, brown dolomite, trace tan chert, specks calcite, marcasite 2½
160	165	Brown dolomite, gray chert 95-5, marcasite 2
165	170	Brown dolomite, gray & tan chert 97-3, marcasite 2
170	175	Small recovery brown dolomite, trace tan chert, marcasite 1½
175	180	Brown dolomite, tan chert 99-1, marcasite 1½
180	182½	Brown dolomite, tan chert 99-1, marcasite 2
182½	185	Very small recovery, gray-brown & brown dolomite, marcasite ½ GRAY - 182½
185	190	No recovery
190	195	Very small recovery
195	197½	Pale gray dark-speckled dolomite, marcasite ½ BLUE - 195
197½	200	Gray dark-speckled dolomite, considerable brown & tan dolomite (limy), trace marcasite
200	202½	Gray dark-speckled dolomite, trace calcite, marcasite 1, speck blende
202½	205	Brown & light brown fossiliferous dolomite limestone, dark brown shale 1, trace marcasite, few specks blende OIL - 202½
205	207½	Brown & dark brown shaly limestone, marcasite ½, trace blende
207½	210	Green shale & gray clay, brown & dark brown limestone 80-20, marcasite 1, few specks blende CLAY - 208
210	212½	Brown & dark brown dolomite limestone, specks calcite, marcasite 1, few specks blende GLASS - 210
212½	215	Light gray dolomite limestone, trace dolomite limestone 95-5, marcasite ½ McGREGOR - 212½
215	217½	Light gray dolomite limestone, gray clay 5, marcasite ½
217½	220	Light gray dolomite limestone, marcasite 1
220	225	Light gray dolomite limestone, green shale 97-3, marcasite ½

Water table: 42'

Depth From	Depth To	Assay ZnS	Assay FeS_2	Assay PbS
90	95	0.15	3.20	0.20
95	100	0.15	3.00	0.12

Lafayette County
~~Sec. R~~ -150-

~~Serial No. 14~~
Hole No. 26

Date completed: 8/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H. Davis & E. Poehlmann
Type of Drilling: Churn

Collar Elevation: 951.48'
Depth of Hole: 204.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Depth From	Depth To	Lithology
0	10	Brown soil
10	20	Buff dolomite & brown soil caving
20	25	Buff dolomite, few specks limonite
25	40	Buff dolomite, few specks limonite
40	55	Buff dolomite, thin trace limonite
55	60	Buff dolomite, brown chert 99-1, few specks limonite DRAB - 58
60	65	Buff dolomite, brown chert 97-3, few specks limonite
65	75	Dirty brown dolomite, dark brown chert 93-7, few specks limonite & marcasite
75	85	Light brown dolomite, brown & tan chert 97-3, specks marcasite
85	95	Light brown dolomite, brown & tan chert 96-4, specks marcasite
95	105	Light brown dolomite, brown & tan chert 96-4, few specks marcasite
105	115	Brown dolomite, brown & tan chert 96-4, specks marcasite
115	120	Light brown dolomite, gray & brown chert 96-4, few specks marcasite
120	125	Light brown dolomite, gray & brown chert 95-5, few specks marcasite
125	135	Brown dolomite, borwn & gray chert 95-5, few specks marcasite
135	145	Brown dolomite, brown & gray chert 96-4, few specks marcasite (soft)
145	150	Light brown dolomite, few specks chert, a speck marcasite
150	155	Pale brown-buff & buff dolomite, a speck calcite, speck marcasite (few coarse cuttings)
155	160	Coarse cuttings coarse grained pale brown-buff & buff dolomite, a piece brown clay, a speck marcasite
160	165	Coarse cuttings coarse grained pale brown-buff & buff dolomite, a speck marcasite GRAY - 155-160
165	170	Coarse cuttings coarse grained light buff & gray-brown dolomite & gray & buff clays, few specks marcasite
170	175	Coarse cuttings coarse grained light buff & pale gray dolomite, few specks marcasite BLUE - ? (Hard)
175	180	Light buff, pale gray, gray-brown & dark gray coarse grained dolomite, trace gray clay, few specks marcasite
180	182½	Buff, gray, brown & dark gray coarse grained dolomite, some blue dolomitic limestone & brown dolomitic limestone, some fossils, gray clay 5, (coarse cuttings) few specks marcasite OIL - ?
182½	185	Same as 180-182½, but more gray clay, about 10%
185	187½	Same as 180-182½, but more blue & brown dolomite limestone, about 15%
187½	190	Same as 180-182½
190	192½	Light gray-blue clay 20 (remainder same as 180-182½) CLAY - 187½

Continued

Lafayette County
~~Sec. Rec. 150~~

~~Serial No. 14~~
Hole No. 26 (Cont'd)
Collar Elevation: 951.48'
Depth of Hole: 204.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 8/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H. Davis & E. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
192½	195	Light brown & tan limestone, buff & light gray-brown coarse-grained dolomite 60-40, thin trace marcasite
195	197½	Dark brown & light brown limestone, coarse-grained dolomite 15, thin trace marcasite GLASS - 192½
197½	200	Dark brown & brown limestone, trace dark brown shale, thin trace marcasite
200	202½	Gray dolomite limestone, brown limestone 60-20, trace green shale, trace dark brown shale, thin trace marcasite McGREGOR - 200.5

Hole was mostly soft and caving from 155' to 191'
Water table: 26

Serial No. 15
Hole No. 27
Collar Elevation: 972.78'
Depth of Hole: 215.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 8/27/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H.Davis & E.Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Buff clay & soil
8	15	Buff sandy clay
15	70	Buff dolomite
70	75	Buff & brown dolomite, tan chert 99-1 DRAB - 73
75	80	Light brown dolomite, brown-tan chert 94-6, few specks limonite
80	90	Light brown dolomite, tan chert 97-3, few specks limonite
90	100	Light brown dolomite, brown & tan chert 98-2, trace limonite
100	110	Brown dolomite, brown & tan chert 94-6, trace limonite
110	120	Brown dolomite, brown & tan chert 93-7, trace limonite
120	125	Light brown dolomite, brown & tan chert 97-3, trace limonite
125	130	No recovery, losing water
130	135	Light brown dolomite, brown & tan chert 99-1, trace limonite
135	145	Light brown dolomite, gray & tan chert 96-4, few specks limonite
145	155	Brown dolomite, trace chert, few specks limonite, few specks marcasite
155	165	Brown dolomite, brown & tan chert 96-4, few specks marcasite, limonite
165	170	Brown dolomite, brown & tan chert 95-5, few specks limonite & marcasite

Continued

Lafayette County
~~Sec. R[illegible] 150~~

~~Serial No. 15~~
Hole No. 27 (Cont'd)
Collar Elevation: 972.78'
Depth of Hole: 215.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 8/27/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H.Davis & E.J.Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
170	175	Brown dolomite, marcasite ½	
175	180	No recovery, strong water	GRAY - 176
180	182½	Brown & buff dolomite, trace gray dolomite, trace marcasite	
182½	185	Light gray coarse grained dolomite, brown & buff dolomite 10, trace marcasite	
185	187½	Pale gray coarse grained dolomite, marcasite 1/10, specks blende & galena	
187½	190	Pale gray coarse grained dolomite, trace marcasite	BLUE - 190½
190	192½	Gray dark-speckled dolomite, pale gray coarse grained dolomite 80-20, trace marcasite, few specks galena (gray clay 9)	
192½	195	Gray dark-speckled dolomite, trace marcasite	
195	197½	Gray dark-speckled dolomite, brown clay 5, brown dolomite limestone 1, gray clay 20, trace marcasite	
197½	200	Brown & tan fossiliferous limestone & dolomitic limestone, trace marcasite, specks galena	OIL - 197½
200	202½	Light brown & tan fossiliferous dolomitic limestone, green shale & gray clay 80-20, specks phosphate, trace marcasite, specks galena	
202½	205	Light brown dolomitic limestone, gray clay 80-20, brown shale 5, marcasite 1/10, few specks galena	CLAY - 202
205	210	No recovery, caving, strong water	GLASS - 203
210	212	Brown dolomitic limestone, trace marcasite	
212	214	Gray dolomitic limestone, brown dolomitic limestone 60-40, trace marcasite, specks galena	McGREGOR - 213

Water table: 52'

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 22~~
Hole No. 28
Collar Elevation: 970.77'
Depth of Hole: 214.8' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 9/2/52
Drilled by: Eagle-Picher, DMA
Logged by: Eastmoore & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	4	Soil	
4	10	Yellow clay	
10	25	Yellow clay, with some buff dolomite	
25	30	Buff dolomite, trace limonite	
30	40	Buff dolomite, limonite ½	
40	50	Buff dolomite, trace limonite, a speck galena	
50	60	Buff dolomite, trace limonite, a speck calcite	
60	70	Buff & brown dolomite, trace limonite	
70	80	Buff-gray & light gray dolomite, tan chert 99-1, trace limonite	DRAB -78
80	90	Buff & brown dolomite, tan & gray chert 93-7, limonite 1, galena 3/10	
90	100	Brown & buff dolomite, tan & gray chert 95-5, limonite & marcasite ½, galena 2/10	
100	110	Buff & buff-gray dolomite, tan & gray chert 98-2, trace limonite, trace galena	
110	120	Buff-gray dolomite, tan & gray chert 90-10, trace limonite & marcasite	
120	130	Buff-gray dolomite, trace tan chert, trace limonite & marcasite, a speck galena	
130	140	Buff-gray & light brown dolomite, tan & gray chert 99-1, trace marcasite, a speck galena	
140	150	Buff-gray & light brown dolomite, gray chert 99-1, marcasite ½	
150	160	Brown & buff dolomite, brown & tan chert 99-1, marcasite 1	
160	170	Brown & buff dolomite, brown & tan chert 99-1, marcasite ½	
170	175	Brown & buff dolomite, trace tan chert, marcasite ½	
175	177½	Gray & light brown dolomite, marcasite 3/10, trace green clay	GRAY -176
177½	180	Gray & light brown dolomite, marcasite ½	
180	182½	Gray & light brown dolomite, trace gray clay, marcasite ½	
182½	185	Gray dolomite, marcasite 1, trace calcite	
185	187½	Gray dolomite, marcasite 1½	
187½	190	Brown & some dark-speckled gray dolomite, gray dark-speckled gray dolomite, gray dark-speckled clay 5, speck blende, speck galena, marcasite 2	
190	192½	Gray dark-speckled dolomite, calcite 4, marcasite 5, trace blende	BLUE-189
192½	195	Gray dark-speckled dolomite, gray clay 3, calcite 2, marcasite 2, a speck blende	
195	197½	Brown & gray dolomite limestone, trace gray dark-speckled dolomite, brown shaly limestone 2, marcasite 1, blende ½	OIL - 195
197½	200	Brown dolomitic limestone, brown shaly limestone 4, trace marcasite, blende 1/10, a speck galena	
200	202½	Brown dolomitic limestone, brown shaly limestone 3, gray clay 5, trace marcasite, trace blende, a speck galena	CLAY - 202
202½	205	Brown dolomitic limestone, brown shaly limestone 3, gray clay 10, trace brown chert, trace marcasite, blende 1/10	
205	207½	Light brown & brown dolomitic limestone, brown shaly limestone 5, trace green shale, trace blende, trace marcasite	
207½	210	Gray & light gray limestone, brown dolomitic limestone 30, trace marcasite, a speck blende	
210	212½	Gray & light gray limestone, trace green shale, trace marcasite, trace blende	GLASS - 203

Continued

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~~Serial No. 22~~
Hole No. 28 (Continued)
Collar Elevation: 970.77'
Depth of Hole: 214.8' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 9/2/52
Drilled by: Eagle-Picher, DMA
Logged by: Eastmoore & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
212½	215	Gray & light gray limestone, trace green shale, trace marcasite, a speck blende McGREGOR - 208

Water table: 82'

Hit water at: 55' weak
104' not too strong
153' not too strong
Hole was firm

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Serial No. 23
Hole No. 29
Collar Elevation: 970.79'
Depth of Hole: 214' (Measurement by steel tape)
Location: Calvert Estate

Date completed: 9/13/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Brown clay & soil
8	15	Buff clay & some buff dolomite
15	50	Buff dolomite, few specks limonite & marcasite
50	70	Dark buff dolomite, few specks limonite & marcasite
70	75	Brown-buff & light brown dolomite, brown & tan chert 96-4, DRAB - 75
75	85	Brown-buff dolomite, brown & tan chert 94-6, few specks limonite & marcasite
85	95	Brown-buff dolomite, brown & tan chert 96-4, few specks marcasite & limonite
95	105	Buff & light brown dolomite, brown & tan chert 97-3, trace limonite & marcasite
105	115	Buff & light brown dolomite, brown & tan chert 98-2, trace limonite & marcasite
115	125	Pale brown & light buff dolomite, tan chert 98-2, trace marcasite & limonite
125	135	Brown & buff dolomite, brown & tan chert 95-5, trace marcasite
135	145	Brown & buff dolomite, brown & tan chert 96-4, marcasite 1/10
145	155	Buff & light brown dolomite, coarse cuttings brown & tan chert 95-5, marcasite ½, trace limonite
155	165	Light brown & buff dolomite, coarse cuttings brown & tan chert 96-4, limonite & marcasite 1
165	170	Coarse cuttings brown & buff dolomite & brown & tan chert, marcasite & limonite 4, few specks blende
170	175	Gray, buff & brown dolomite & brown & tan chert, calcite ½, marcasite 4, blende ½
175	177½	Gray, brown & buff dolomite, some brown & tan chert, calcite ½, marcasite 3½, blende 1

Continued

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~~Serial No. 23~~
Hole No. 29 (Continued)
Collar Elevation: 970.79'
Depth of Hole: 214' (Measurement by steel tape)
Location: Calvert Estate

Date completed: 9/13/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
177½	180	Gray & brown dolomite, brown & tan chert 15, calcite 1, marcasite 4, blende ½
180	182½	Gray & brown dolomite, brown & tan chert 17, calcite ½, trace gray clay, marcasite 5, blende ½
182½	185	Gray dolomite, some light brown-buff limy dolomite, brown & tan chert 20, marcasite 9, blende 3/10
185	187½	Gray, brown & buff dolomite, gray clay 5, brown chert 10, marcasite 8, blende 1
187½	190	Gray-brown & buff dolomite, gray clay 6, brown chert 12, marcasite 5, blende ½ OIL - 190-192½
190	192½	Gray-brown & buff dolomite, some brown chert, some brown dolomitic limestone & few fossils, marcasite 5, blende 1½
192½	195	Gray, brown & buff dolomite & brown chert, some brown dolomitic limestone & fossils, marcasite 7, blende 1
195	197½	Brown chert 70%, some brown dolomitic limestone & gray & buff dolomite, marcasite 10, blende 1½
197½	200	Brown chert 50%, some brown dolomitic limestone, gray clay 10, marcasite 8, blende 4½
200	202½	Brown dolomitic limestone & gray-brown dolomite & brown chert, gray clay 25, marcasite 10, blende 5 CLAY - 200-202½
202½	205	Dark brown dolomitic limestone, gray clay 25, considerable dolomite & chert ravellings, marcasite 11, blende 7½ GLASS - 202½
205	207½	Gray & Buff dolomitic ravellings 70%, trace calcite, marcasite 22, blende 7
207½	208	Gray & Buff dolomitic ravellings 85%, marcasite 40, blende 8 Few specks appear to be McGREGOR gray dolomitic limestone in this cut.
208	210	Gray dolomitic limestone & brown dolomitic limestone, gray ravellings 40, marcasite 12, blende 2 McGREGOR - 208
210	214	Gray dolomitic limestone, GRAY ravellings 30, marcasite 14, blende 3

Water table: 64'

Depth From	Depth To	Assays ZnS	FeS2	PbS
170	175	1.50	15.70	nil.
175	177½	1.45	14.00	nil.
177½	180	1.25	12.30	nil.
180	182½	1.50	12.30	nil.
182½	185	1.20	13.40	nil.
185	187½	1.95	13.60	nil.
187½	190	2.25	14.40	nil.
190	192½	2.15	11.00	nil.
192½	195	2.20	13.50	nil.
195	197½	1.55	16.30	nil.
197½	200	4.45	12.50	nil.
200	202½	5.00	10.30	nil.
202½	205	3.35	10.50	nil.
205	207½	3.75	13.10	nil.
207½	210	2.55	18.90	nil.
210	214	1.75	11.60	nil.

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~~Serial No. 24~~
Hole No. 30
Collar Elevation: 957.17'
Depth of Hole: 197.5' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 9/22/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Black soil
10	15	Brown clay
15	20	Brown clay, buff dolomite 95-5
20	25	Brown clay, buff dolomite 90-10
25	30	Buff dolomite, few specks limonite
30	35	Buff dolomite, trace limonite (considerable brown clay)
35	40	Buff dolomite, thin trace limonite (considerable brown clay)
40	45	Buff dolomite, brown clay, trace dark gray clay, trace limonite
45	50	Buff dolomite, brown clay, few specks marcasite
50	55	Buff dolomite, brown clay 75-25, brown chert 1, few specks marcasite, a speck blende DRAB - 52½
55	60	Dark buff dolomite, tan & brown chert 85-15, specks marcasite
60	70	Buff & dark buff dolomite, brown & tan chert 88-12, specks marcasite & limonite
70	75	Buff dolomite, brown chert, brown dolomite 80-15-5, few specks galena (coarse cuttings)
75	80	Buff dolomite, tan chert 98-2, trace dark gray clay
80	90	Buff dolomite, tan & brown chert 85-15
90	100	Buff dolomite, tan & brown dolomite 75-25, trace galena
100	105	Buff dolomite, gray-brown & tan chert 80-20, few specks galena
105	110	Coarse cuttings; buff dolomite, gray-brown & tan chert 92-8
110	115	Buff dolomite, tan chert 90-10, trace gray dolomite
115	120	Buff dolomite, tan & gray-brown chert 95-5, buff clay 5, trace gray shale
120	125	Dark buff dolomite, tan chert 98-2, buff clay 3, trace gray shale
125	130	Dark buff dolomite, tan & brown chert 90-10, fairly coarse cuttings
130	135	Dark buff dolomite, tan & brown chert 94-6, brown clay 3
135	140	Dark buff dolomite, tan chert 95-5, brown-buff clay 2, gray shale 1, few specks marcasite
140	145	Buff dolomite, brown, tan & gray chert 93-7, gray shale 2, trace marcasite
145	150	Brown dolomite, gray-brown chert, buff dolomite 60-30-10 (coarse cuttings), marcasite 1, few specks blende
150	155	Coarse cuttings: brown dolomite, gray-brown chert, buff dolomite 50-35-15, marcasite 1½, few specks blende
155	160	Coarse cuttings: brown dolomite, gray-brown chert, buff dolomite 70-20-10, few coarse chips of gray dolomite, marcasite 1½, blende 1/10 GRAY - 155
160	162½	Brown dolomite, gray-brown chert, buff dolomite 60-20-20, marcasite 2, blende 2/10
162½	165	Coarse cuttings: brown dolomite, dark buff dolomite, gray-brown chert 80-13-7, marcasite 3, trace blende
165	167½	Coarse cuttings: brown dolomite, gray-brown & tan chert 92-8, marcasite 3, trace blende
167½	170	Coarse cuttings: brown dolomite, tan & gray-brown chert, buff dolomite 70-15-15, marcasite 5, few specks blende
170	172½	Brown dolomite, gray-brown & tan chert, buff dolomite, gray marcasite-speckled dolomite, gray clay 85-5-5-3-2, marcasite 8 (mostly coarse), few specks blende BLUE - 170?

Continued

Lafayette County
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~~Serial No. 24~~
Hole No. 30 (Continued)
Collar Elevation: 957.17'
Depth of Hole: 197.5' (Measurement by steel tape)
Location: Calvert Estate, Tract #1

Date completed: 9/22/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
172½	175	Brown dolomite, gray-brown & tan chert, buff dolomite 85-10-5, trace gray dolomite & gray clay, coarse cuttings; marcasite 10, few specks blende
175	177½	Brown dolomite, gray-brown chert 92-8, trace buff dolomite, marcasite 15, few specks blende
177½	180	Brown dolomite, gray-brown chert 85-15, trace gray dolomite, marcasite 12, few specks blende & calcite
180	182½	Buff dolomite, brown dolomite, gray-brown chert 50-45-5, trace tan fossiliferous limestone (coarse cuttings), marcasite 8, few specks blende OIL - 180?
182½	185	Brown dolomite, buff dolomite, gray-brown chert 60-30-10, trace gray clay & light gray clay, marcasite 3, trace blende
185	187½	Brown & buff dolomite, gray clay, few specks phosphate, gray-brown chert 4, marcasite 2, few coarse crystals of blende CLAY - 186?
187½	190	Extra coarse cuttings: brown & buff dolomite, trace chert, dark brown "Glassrock" dolomite, marcasite 1½, few specks blende, few specks calcite GLASS - 188?
190	192½	Dark buff dolomite, brown limestone 80-20, marcasite 2, few coarse pieces of blende
192½	195	Dark buff dolomite, dark gray coarse-grained dolomite 90-10, trace brown limestone, few fossils, marcasite (coarse) 5, few specks blende
195	197½	Dark buff dolomite, gray dolomitic limestone 90-10, marcasite (coarse) 7, few specks blende McGREGOR - 195

Remarks
Water table: 32'
Hole was extremely loose and caving badly.
Impossible to pick contacts accurately.
Hole was not cased due to uncertainty of where to set it.

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~~Serial No. 25~~
Hole No. 31
Collar Elevation: 974.16'
Depth of Hole: 218' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 10/7/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Dark buff dolomite-red/brown clay 95-5, trace limonite, speck galena
10	15	Dark buff dolomite-trace limonite, few specks marcasite & galena
15	25	Dark buff dolomite-limonite 2/10, few specks marcasite & galena (coarse)
25	35	Buff dolomite-trace limonite, few specks marcasite (rather coarse cuttings)
35	60	Buff dolomite-few specks limonite & marcasite
60	65	Buff dolomite-thin trace limonite
65	70	Dark buff dolomite-trace calcite, trace limonite, speck galena
70	75	Dark buff dolomite-brown chert 98-2, trace limonite DRAB 73
75	80	Rather coarse cuttings: Buff dolomite-brown chert 80-20, trace galena
80	85	Buff dolomite-brown & dark buff chert 85-15, trace galena
85	90	Buff dolomite-dark buff chert 75-25, galena 1%
90	95	Buff dolomite-buff & tan chert 92-8, galena 2/10
95	100	Buff dolomite-buff, tan & brown chert 80-20, trace galena
100	110	Buff & gray-brown dolomite-buff, tan & gray chert 88-12, galena 3/10
110	120	Dark buff dolomite-buff & gray chert 90-10, trace galena, few specks marcasite
120	130	Buff dolomite-buff chert 98-2, trace limonite stained clay & gray clay, thin trace galena
130	140	Buff dolomite-brown dolomite-tan chert 95-3-2, galena 1/10
140	150	Buff dolomite-trace tan chert, trace galena, trace limonite
150	160	Buff dolomite-brown dolomite-tan chert 80-15-5, trace calcite, marcasite & limonite ½
160	170	Buff & brown dolomite-tan & gray chert 95-5, marcasite 1
170	175	No recovery GRAY 175
175	177½	Gray/brown dolomite-buff dolomite 90-10, calcite 5, marcasite 6
177½	180	Gray dolomite-buff & brown dolomite ravellings 30, calcite 4, marcasite 8, specks galena
180	182½	Brown/gray dolomite-trace dark gray clay, calcite 1, marcasite 18 (set casing to 182½)
182½	185	Gray/brown dolomite-dark gray clay 1, trace calcite, marcasite 16
185	187½	Gray/brown dolomite-trace calcite, marcasite 20
187½	190	Gray/brown dolomite-(some buff dolomite ravellings) marcasite 22 BLUE 190
190	192½	Dark gray/brown dolomite-trace fossils, marcasite 10
192½	195	Dark gray/brown dolomite-trace fossils, marcasite 15, few specks blende
195	197½	Coarse cuttings: Dark gray/brown dolomite-trace fossils, marcasite 7, blende 3% (coarse crystals)
197½	200	Coarse cuttings: Dark gray/brown dolomite-gray dark/speckled dolomite 60-40, gray clay 1, marcasite 12, blende 5% OIL 200?
200	202½	Gray/brown dolomite-trace fossils, marcasite 17, blende 7%
202½	205	Gray/brown dolomite-brown fossiliferous dolomitic limestone
205	207½	Brown fossiliferous dolomitic limestone-green clay 80-20, marcasite 8, blende 2% CLAY 207 (?)

Continued

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~~Serial No. 25~~
Hole No. 31 (Continued)
Collar Elevation: 974.16'
Depth of Hole: 218' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 10/7/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
207½	210	Gray/brown fossiliferous dolomitic limestone-gray clay 60-40, marcasite 10, blende 1% GLASS 208½ (?)
210	212½	Gray/brown dolomitic limestone-gray dolomitic limestone 80-20, marcasite 10, blende 7/10 McGREGOR 212 (?)
212½	215	Gray & brown/gray dolomitic limestone-marcasite 6, blende ½
215	217½	Brown/gray dolomitic limestone-marcasite 9, blende 1%
217½	218½	Gray dolomitic limestone-marcasite 25, blende 10%, (this last cut was very firm formation and mineralization is ravelling from above.)

Water table: 56'

Remarks
Difficult to pick contacts.
125 to 130 very loose, Oilrock was very soft
210 to 218½ very hard formation
Set 4 & 7/8 casing at 182½ and it followed bit to 195 feet.

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
85	90	0.30	4.30	1.17
180	182½	0.25	12.10	nil.
182½	185	0.35	15.10	nil.
185	187½	0.85	14.90	nil.
187½	190	0.60	12.90	nil.
190	192½	0.80	13.40	nil.
192½	195	1.10	12.90	nil.
195	197½	7.10	17.00	nil.
197½	200	10.60	21.70	nil.
200	202½	5.30	19.60	nil.
202½	205	2.20	11.20	nil.
205	207½	1.65	9.30	nil.
207½	210	1.30	18.90	nil.

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~~Serial No. 26~~
Hole No. 32
Collar Elevation: 976.25+'
Depth of Hole: 217.5' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 10/16/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Brown clay	
10	15	Buff dolomite, brown clay 75-25, trace limonite	
15	20	Dark buff dolomite, limonite 3/10, marcasite 1/10, trace galena, specks blende	
20	25	Buff dolomite, trace limonite, few specks marcasite & galena	
25	35	Buff dolomite, limonite 4/10, few specks marcasite & galena	
35	50	Buff dolomite (some limonite-speckled) trace limonite	
50	60	Buff dolomite (some limonite-speckled) limonite 3/10	
60	70	Dark buff dolomite, limonite ½	
70	75	Buff dolomite, limonite 2/10	
75	80	Buff dolomite, dark brown chert 92-8, limonite 1/10	DRAB - 77½
80	90	Brown-buff & dark buff dolomite, marcasite-speckled chert & tan chert 94-6, limonite & marcasite ½, trace galena	
90	100	Brown-buff dolomite, marcasite-speckled chert 95-5, marcasite & limonite 5	
100	110	Brown-buff dolomite, brown, gray & tan chert 91-9, limonite & marcasite 1, trace galena	
110	115	Brown dolomite, gray-brown chert 88-12, marcasite & limonite 3/10, thin trace galena	
115	120	Brown-buff dolomite, gray chert 85-15, marcasite & limonite 1/10	
120	130	Brown-buff dolomite, gray & tan chert 90-10, marcasite & limonite 1/10, specks galena	
130	140	Buffish-brown dolomite, tan chert 99-1, marcasite & limonite ½, specks galena	
140	150	Brown dolomite, tan & gray chert 94-6, trace calcite, limonite & marcasite 2/10	
150	160	Brown dolomite, trace tan chert, trace calcite, trace marcasite	
160	170	Brown dolomite, tan & gray chert 93-7, marcasite 1	
170	175	Brown dolomite, trace tan chert, trace calcite, marcasite 12	
175	177½	Brown dolomite, trace calcite, marcasite 15	
177½	180	Brown dolomite, marcasite 20	
180	182½	Brown dolomite, trace gray dolomite, trace calcite, marcasite 18	
182½	185	Gray dolomite, marcasite 12	GRAY - 182½
185	187½	Gray dolomite, marcasite 10	
187½	190	Gray dolomite, marcasite 8, trace calcite	
190	192½	Gray dolomite, marcasite 9, trace calcite	
192½	195	Gray dolomite, marcasite 5	
195	197½	Brown-gray dolomite, gray dark-speckled dolomite 60-40, calcite 20, marcasite 20, blende 5, gray clay 1	BLUE - 196
197½	200	Gray dark-speckled dolomite, gray clay 5, calcite 5, marcasite 7, blende 1	
200	202½	Brown dolomite, gray dark-speckled dolomite 60-40, some fossils, calcite 4, marcasite 5, blende 7	OIL - 201
202½	205	Brown fossiliferous dolomitic limestone, marcasite 8, blende 5	
205	207½	Brown fossiliferous dolomitic limestone, brown shale 97-3, trace brown clay, marcasite 7, blende 4	
207½	210	Brown dolomitic limestone, green clay 80-20, marcasite 3, blende 1	CLAY - 209½

Continued

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~~Serial No. 26~~
Hole No. 32 (Continued)
Collar Elevation: 976.25+'
Depth of Hole: 217.5' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 10/16/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
210	212½	Brown dolomitic limestone, green clay & gray fossiliferous limestone, marcasite 2, blende 6/10
212½	215	Coarse cuttings: Dark brown dolomite, bentonite 80-20, marcasite 2, blende 3/10 — GLASS - 213
215	217½	Dark brown dolomite, gray dolomitic limestone 60-40, marcasite 2, blende ½ — McGREGOR - 216½
217½	220	Gray dolomitic limestone, marcasite 2, blende 3/10

Water table: 51'

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
175	177½	nil.	16.80	nil.
177½	180	nil.	10.80	nil.
180	182½	nil.	8.40	nil.
182½	185	nil.	10.50	nil.
195	197½	6.65	19.80	nil.
197½	200	2.40	14.60	nil.
200	202½	9.60	8.60	nil.
202½	205	5.15	7.50	nil.
205	207½	3.25	8.40	nil.
207½	210	3.15	9.50	nil.

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~~Serial No. 28~~
Hole No. 33
Collar Elevation: 961.48'
Depth of Hole: 203.0'
Location: Calvert Estate (Tract #1)

Date completed: 11/1/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Dark buff dolomite-speck limonite & marcasite
5	10	Dark buff dolomite-trace limonite
10	20	Buff dolomite-trace limonite, few specks calcite
20	30	Buff dolomite-few coarse pieces of limonite
30	40	Buff limonite/speckled dolomite
40	50	Buff & dark buff dolomite-trace gray/brown clay
50	60	Buff & dark buff dolomite-gray/brown clay 1, trace calcite
60	65	Buff & dark buff dolomite-gray/brown clay 2, trace calcite
65	70	Buff dolomite-brown & tan chert 95-5 DRAB 67½
70	75	Buff dolomite-brown & dark buff chert 92-8
75	80	Buff dolomite-brown, buff & tan chert 70-30, dark gray/brown clay 3
80	90	Buff & dark buff dolomite-brown, buff & tan chert 75-25, dark gray/brown clay 5
90	100	Some coarse cuttings: Buff & dark buff dolomite-brown, buff & tan chert 82-15, dark gray/brown clay 1
100	110	Buff & dark buff dolomite-brown, buff & tan chert 80-20, dark gray/brown clay 4, few specks galena
110	120	Fine Cuttings: Buff dolomite-light gray chert 90-10, few specks galena, trace dark gray clay
120	130	Fine Cuttings: Buff dolomite-light gray chert & buff chert 95-5, trace dark gray clay
130	140	Buff & dark buff dolomite-white & buff chert 96-4
140	145	Dark buff & buff dolomite-white & buff chert 92-8, thin trace galena & marcasite
145	150	Buff & dark buff dolomite-tan & gray/brown chert 96-4, few specks galena
150	155	Buff & dark buff dolomite-tan chert 99-1, trace blue clay, few specks galena
155	160	No recovery
160	165	Buff dolomite-tan chert 93-7, few specks dark brown chert
165	170	Buff dolomite-brown dolomite-gray/brown & tan chert 50-30-20, few specks marcasite & galena GRAY 170
170	175	Buff coarse-green dolomite, dull green clay 2, trace limonite, few specks galena
175	180	Dark buff dolomite-dark gray coarse-green dolomite 50-50, trace marcasite BLUE 178
180	182½	Dark gray coarse-grained dolomite-dark buff dolomite & chert ravellings 80-20, trace dark brown dolomite-trace marcasite
182½	185	Dark gray dolomite-numerous fossils, dark buff dolomite & chert ravellings 25, trace dark brown dolomite-thin trace marcasite OIL 185
185	187½	Buff dolomite-tan chert 85-15 (apparently nothing but ravelling)
187½	190	Buff dolomite & chert ravelling-light gray clay 96-4, marcasite 1/10, few specks galena
190	192½	Buff dolomite & chert ravelling-trace light gray dark/speckled limestone-trace green shale, trace marcasite, few specks phosphate CLAY 192
192½	195	Buff dolomite & chert ravelling-green shale & dark gray fossiliferous limestone-brown limestone 95-3-2, trace limonite & marcasite GLASS 194

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 28~~
Hole No. 33 (Continued)
Collar Elevation: 961.48'
Depth of Hole: 203.0' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 11/1/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
195	197½	Buff dolomite & chert ravellings-brown limestone 95-5, few specks marcasite
197½	200	Buff dolomite ravellings-brown limestone 70-30, trace dark brown shale, trace green shale, trace marcasite McGREGOR 200
200	202½	Buff dolomite ravellings-brown limestone-gray dolomitic limestone 50-30-20, green shale 8, dark brown shale 1, trace marcasite

Water table: 37'

Depth From	Depth To	Remarks
175	185	Soft formation
185	192	Oilrock was hard
192½	197	Glassrock hard

Extremely loose hole, cased to 150', and should have been cased more. Impossible to pick Tops of formations accurately.

Lafayette County
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~~Serial~~ No. ~~29~~
Hole No. 34
Collar Elevation: 965.65'
Depth of Hole: 220.6' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 11/11/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Black soil
15	20	Buff dolomite-brown clay 80-20, limonite ½
20	25	Dark buff dolomite
25	30	Buff dolomite
30	40	Dark buff dolomite
40	50	Coarse cuttings: Buff dolomite-trace gray & brown clay
50	55	Buff dolomite-trace calcite, brown clay 1, trace limonite
55	60	Buff dolomite-brown clay 2, trace limonite
60	65	Buff dolomite-brown clay 2, trace brown & gray/brown chert DRAB 65
65	70	Buff dolomite-gray/brown & buff chert 8, dark gray/brown clay 4, thin trace limonite
70	75	Buff dolomite-gray/brown & buff chert 85-15, dark gray/brown clay , marcasite & limonite 2/10, thin trace galena
75	80	Buff dolomite-gray/brown, brown & buff chert 80-20, dark gray/brown clay 1, marcasite 1/10
80	85	Buff dolomite-gray/brown & buff chert 90-10, gray/brown clay 1, trace marcasite
85	90	Buff dolomite-gray/brown, brown, & buff chert 88-12, trace gray/brown clay, trace limonite & marcasite
90	95	Brown/gray marcasite/speckled dolomite-buff dolomite 97-3, brown & gray/brown clay 1, marcasite 3/10, trace galena
95	100	Buff dolomite-light gray chert 90-10, marcasite 1/10, galena 1/10
100	110	Buff dolomite-gray & gray/brown chert 93-7, trace marcasite, few specks galena
110	120	Buff dolomite-gray & buff chert 96-4, trace gray/brown clay, marcasite 1/10, few specks galena
120	130	Buff dolomite-gray & tan chert 94-6, brown & gray/brown clay 2, trace marcasite
130	135	Buff dolomite-gray, tan & buff chert 95-5, gray/brown clay 3, trace marcasite
135	140	Brown dolomite-buff dolomite 90-10, trace gray chert, gray/brown clay 1, thin trace marcasite
140	145	Buff & brown/buff dolomite-trace gray chert, trace calcite, trace gray/brown clay, marcasite 1/10, speck galena
145	150	Buff dolomite-brown & gray marcasite/speckled chert 92-8, brown clay 3, marcasite 3/10
150	155	Buff & brown/buff dolomite-brown, gray & buff & tan chert 95-5, marcasite 2/10, speck galena
155	160	Buff & dark buff dolomite-brown & tan chert 99-1, brown clay 1, thin trace marcasite
160	165	Buff & dark buff dolomite-brown & tan chert 98-2, few specks marcasite
165	170	Buff dolomite-trace tan & buff chert, few coarse chips gray dolomite-trace gray/brown clay, trace marcasite
170	175	Light buff & dark buff dolomite-few specks gray dolomite-trace brown & gray/brown clay, limonite & marcasite 1/10 GRAY 170
175	180	Dark buff dolomite-brown & gray/brown chert ravellings 1, trace limonite & marcasite

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 29~~
Hole No. 34 (Continued)
Collar Elevation: 965.65'
Depth of Hole: 220.6' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 11/11/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
180	182½	Coarse cuttings: Dark buff dolomite-limonite & marcasite 1
182½	185	Coarse cuttings: Buff & dark buff dolomite-chert ravellings 1, marcasite 25, trace limonite
185	187½	Buff dolomitic ravellings, dark gray dolomite 98-2, chert ravellings 1, marcasite 5, limonite ½ BLUE 185
187½	190	Dark buff dolomite & chert ravellings - dark gray dolomite 80-20, marcasite 4 OIL 192½
190	192½	Dark buff dolomitic ravellings-dark gray dolomite 60-40, trace brown fossiliferous dolomitic limestone-marcasite 4, few specks blende
192½	195	Buff dolomitic ravellings, brown dolomitic limestone 90-10, marcasite 35, speck blende, some dark gray dolomitic ravellings
195	197½	Buff dolomitic ravelling-brown fossiliferous dolomitic limestone-green clay-dark gray dolomitic ravelling, marcasite 30, few specks blende, speck phosphate CLAY 196½
197½	200	Buff dolomite & dark gray dolomitic ravelling, green clay 40, marcasite 20 GLASS 200
200	202½	Ravelling from overlying beds-dark brown dolomite 98-2, marcasite 16
202½	205	Ravelling from overlying beds-brown limestone & dolomite 96-4, trace calcite, marcasite 7
205	207½	Ravelling from overlying beds-(gray dolomitic limestone-brown dolomite 80-20)-marcasite 5 McGREGOR 205½
207½	210	Ravelling from overlying beds-gray dolomitic limestone-marcasite 4
210	215	Ravelling from overlying beds-gray dolomitic limestone, marcasite 8, speck blende
215	220	Mostly gray dolomitic limestone-some ravelling from overlying beds, marcasite 25 caving

Water table: 40'

Depth From	Depth To	Remarks
180	182½	Soft and caving
182	200	Soft
200	220	Hard

All formation "Tops" are questionable due to loose & caving condition of hole

Depth From	Depth To	Assays ZnS	FeS_2	PbS
182½	185	nil.	36.30	nil.
195	197½	0.65	40.20	nil.
197½	200	0.95	32.00	nil.
200	202½	0.55	23.60	nil.

Lafayette County
~~Geo. Ref. 150~~

~~Serial No. 30~~
Hole No. 35
Collar Elevation: 964.88'
Depth of Hole: 215' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 11/21/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	17	Brown and ochre clay
17	25	Buff dolomite-little buff clay
25	35	Buff dolomite
35	40	Dark buff dolomite-limonite 1/10
40	45	Dark buff dolomite-limonite 2
45	50	Dark buff dolomite-limonite 1
50	55	Buff dolomite-limonite 1½, few specks marcasite
55	60	Buff dolomite-limonite 1
60	65	Buff dolomite-gray brown chert 92-8, limonite 3 DRAB - 62½
65	70	Buff dolomite-gray/brown chert 97-3, limonite stained clay 5, gray clay 1, GALENA 1/2%
70	75	Buff, brown and gray brown chert-buff dolomite 70-30, limonite 1, GALENA 1/10%, few specks marcasite
75	80	Brown/buff dolomite-buff, gray and brown chert 88-12, limonite 2/10, marcasite 1/10, FEW SPECKS GALENA
80	85	Brown/buff dolomite-buff, gray, brown and tan chert 90-10, limonite 4/10, trace marcasite, FEW SPECKS GALENA
85	90	Buff/brown dolomite-buff, gray, brown and marcasite/speckled chert 90-10, limonite and marcasite 3/10, THIN TRACE GALENA
90	95	Brown/buff dolomite-buff, gray/brown and gray chert 92-8, limonite and marcasite 2/10, SPECK GALENA
95	100	Brown/buff dolomite-gray brown chert 97-3, trace light brown clay and limonite stained clay, limonite and marcasite 1/10, TRACE GALENA
100	110	Brown dolomite-gray and light brown chert 95-5, trace marcasite TRACE GALENA
110	120	Light brown dolomite-gray and gray buff chert 93-7, trace dark gray clay, few specks marcasite and GALENA
120	130	Brown/buff dolomite-gray, buff, brown and tan chert 94-6, gray clay 3, few specks marcasite and GALENA
130	140	Brown/buff dolomite-gray and tan chert 98-2, gray clay 2, a speck marcasite and GALENA
140	150	Brown/buff dolomite-gray and tan chert and brown chert 94-6, gray clay 1/2, a speck marcasite and GALENA
150	155	Brown/buff dolomite-gray, brown and buff chert 92-8, few specks marcasite
155	160	Buff dolomite-buff and gray brown chert 85-15, gray clay 1, few specks marcasite
160	165	Buff dolomite-tan and buff chert 93-7, brown clay 4, few specks marcasite GRAY - 165
165	170	Buff and dark buff dolomite-chert ravellings 5, gray clay 1, a speck marcasite
170	172½	Gray/buff dolomite-dark brown limonite stained dolomite 80-20, few specks green shale, few specks marcasite
172½	175	Dark buff limonite stained dolomite-tan chert ravellings 6, a speck marcasite
175	177½	Buff dolomite and dark buff limonite stained dolomite-tan chert ravellings 20, speck marcasite

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 30~~
Hole No. 35 (Continued)
Collar Elevation: 964.88'
Depth of Hole: 215' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 11/21/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
177½	180	Buff dolomite and dark buff limonite stained dolomite-gray dark/speckled dolomite 70-30 tan and buff chert ravellings 6, thin trace marcasite BLUE - 179½
180	182½	Gray dark/speckled dolomite-buff dolomite ravellings-gray clay 60-30-10, marcasite 1/2
182½	185	Gray dark/speckled dolomite-gray clay 3, marcasite 4/10
185	187½	Gray dark/speckled dolomite-trace fossils, marcasite 3
187½	190	Tan fossiliferous limestone-blue and buff dolomite ravellings 20-80, calcite 1, marcasite 5 OIL - 187½
190	192½	Blue ravellings-buff ravellings 95-5, trace brown dolomitic limestone, trace fossils, marcasite 1
192½	195	Blue ravellings-brown fossiliferous dolomitic limestone 80-20, brown shaly limestone 2, marcasite 2
195	197½	Tan fossiliferous limestone-blue ravellings 60-40, marcasite 1½
197½	200	Blue ravellings-tan limestone 75-25, fossils, marcasite 1½, A SPECK BLENDE
200	202½	Tan fossiliferous limestone-trace blue ravellings-trace dark brown shaly limestone, marcasite 5, FEW SPECKS BLENDE CLAY - 202.4'
202½	205	Brown and tan limestone-little blue ravellings, marcasite 3, A SPECK BLENDE GLASS - 202.5'
205	207	Brown and tan limestone-considerable blue ravellings, some green clay and bentonite sloughing, trace calcite, marcasite 1½
207	210	Mostly ravellings from Blue, Oilrock and Claybed-few specks gray dolomitic limestone, trace buff ravellings, marcasite 1 McGREGOR - 207'
210	212½	Mostly ravellings from Blue, Oilrock and Claybed-few specks gray dolomitic limestone, marcasite 1
212½	215	Mostly ravellings from Blue, Oilrock and Claybed-few specks gray dolomitic limestone, trace buff dolomite ravellings, marcasite 2

Water table: 90'

Depth From	Depth To	Remarks
105	115	Loose and caving
180	182½	Soft
182½	187	Firm
187	197	Hard (Oilrock)
197	201	Firm (Claybed)
201	208	Hard (Glassrock)
208	215	(Trenton)

Set 140 ft. of 4 7/8 inch pipe
Water at 40 ft. (weak)
Water at 65 ft.
Water at 95 ft.
Water at 113 ft.

Lafa[illegible]te County
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~~Serial No. 62~~
Hole No. 36
Collar Elevation: 978.53'
Depth of Hole: 221.5' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/3/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Dark brown clay
8	10	Buff dolomite-few specks limonite & marcasite
10	30	Rather dark buff dolomite
30	35	Rather dark buff dolomite - a speck marcasite
35	45	Rather dark buff dolomite - a speck marcasite & limonite
45	50	Dark buff dolomite
50	60	Rather dark buff dolomite
60	65	Buff & dark buff dolomite - few specks calcite
65	75	Dark buff calcareous dolomite - thin trace limonite
75	80	Dark buff dolomite & brown/buff dolomite-brown & yellow chert 99-2, thin trace limonite DRAB 77½
80	90	Dark buff dolomite & brown/buff dolomite-brown chert 92-8, thin trace limonite
90	95	Dark buff dolomite & brown/buff dolomite-brown & gray/brown chert 97-3, thin trace limonite & marcasite, few specks galena
95	100	Brown dolomite-dark buff dolomite-brown chert 79-20-1, trace marcasite, few specks galena
100	105	Buffish/brown dolomite-brown chert 97-3, few specks limonite, marcasite & galena
105	110	Buffish/brown dolomite-brown chert 96-4, thin trace marcasite
110	115	Buffish/brown dolomite-gray & brown chert 92-8, trace marcasite, a speck galena
115	120	Buff dolomite-brown chert 90-10, trace marcasite
120	125	Buff dolomite-gray/brown dolomite-brown chert 75-23-2, few specks marcasite
125	130	Brown/buff dolomite-brown chert 93-7, few specks marcasite
130	135	Brown/buff dolomite-brown chert 97-3, thin trace marcasite
135	140	Buff dolomite-tan & brown chert 93-7, a speck marcasite
140	145	Buff dolomite-tan & brown chert 94-6, a speck marcasite
145	150	Buff dolomite-brown chert 99-1, a speck limonite & marcasite
150	155	Buff dolomite-dark buff chert 99-1, trace brown chert, limonite ½
155	160	Brown dolomite-light gray &marcasite/speckled chert 92-8, marcasite 12
160	165	Brown dolomite-light gray & marcasite/speckled chert 85-15, marcasite 10
165	170	Brown dolomite-gray & marcasite/speckled chert 90-10, marcasite
170	175	Buff dolomite & brown/buff dolomite-brown, gray & tan & buff chert 95-5, marcasite 3
175	177½	Buff dolomite & brown/buff dolomite-buff, gray & tan chert 96-4, trace gray dolomite, marcasite 2
177½	180	Ravellings of buff dolomite & various colored chert 90-gray dolomite 10, marcasite 2½
180	182½	Gray dolomite-ravellings of buff dolomite & chert 75-25, marcasite 2 GRAY 177½
182½	185	Gray dolomite-ravellings of buff dolomite & chert 85-15, marcasite 1
185	187½	Brown/gray dolomite-ravellings of buff dolomite & chert 95-5, marcasite 2

Continued

Lafa[illegible]te County
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~~Serial No. 62~~
Hole No. 36
Collar Elevation: 978.53'
Depth of Hole: 221.5' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/3/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
187½	190	Brown/gray dolomite-some ravellings of buff dolomite & chert, marcasite 6	
190	192½	Gray/brown dolomite-some ravellings of buff dolomite & chert, marcasite 5	
192½	195	Gray/brown dolomite-gray dark/speckled dolomite & gray clay 60-40, marcasite 6	BLUE 194
195	197½	Gray dark/speckled dolomite-trace gray clay, marcasite 8, trace calcite	
197½	200	Gray dark/speckled dolomite & brown/gray dolomite-some fossils, marcasite 18, blende 1/10	
200	202½	Brown fossiliferous dolomitic limestone-gray dark/speckled dolomite 60-40, marcasite 15, blende 2%	OIL 201
202½	205	Brown fossiliferous dolomitic limestone-trace brown shaly limestone-marcasite 8, blende 3%	
205	207½	Brown fossiliferous dolomitic limestone-gray clay 70-30, marcasite 5, blende 1%	CLAY 206.8
207½	210	Gray clay-few coarse chips gray marcasite/speckled dolomite-marcasite 3, blende 6/10, trace phosphate	
210	212½	Dark brown dolomite (coarse cuttings)-gray clay 80-20, marcasite 1½, blende 8/10	GLASS 210½
212½	215	Dark brown dolomite-gray dolomitic limestone 80-20, marcasite 2, blende 3/10	McGREGOR 214½
215	217½	Gray dolomitic limestone-glassrock ravellings 5, marcasite 3, blende 4/10	
217½	220	Gray dolomitic limestone-glassrock ravellings 4, marcasite 8, blende ½	
220	221	Gray dolomitic limestone-glassrock ravellings 4, marcasite 3, blende 3/10	

Driller's Remarks: Sandy lime-some caving 130-150; Red clay & buff sandy lime 150-155; hard formation 179-194; soft formation 194-199; hard 199-205; soft formation 205-212. Weak water at 32'; water at 65'; strong water at 138'

Water table: 54'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
197½	200	0.95	16.80	nil.
200	202½	1.25	14.60	nil.
202½	205	1.55	10.50	nil.
205	207½	2.90	11.80	nil.

Lafayette County
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Serial No. 63
Hole No. 37
Collar Elevation: 982.41'
Depth of Hole: 231.4' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/12/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Brown clay	
10	15	Buff clay-buff dolomite 80-20	
15	25	Buff dolomite-trace limonite	
25	40	Buff dolomite-few specks limonite	
40	50	Buff dolomite-few specks marcasite	
50	60	Dark buff dolomite	
60	70	Dark buff dolomite-trace limonite	
70	75	Buff & brown/buff dolomite-limonite 2, few specks marcasite	
75	80	Brown/buff, brown, & buff dolomite-limonite 1, marcasite 1/10, few specks galena	
80	85	Brown & buffish/brown dolomite-brown chert 98-2, limonite & marcasite 2/10, a speck galena	DRAB 82½
85	90	Brown dolomite-gray/brown & brown chert 94-6, limonite & marcasite 3/10, few specks galena	
90	95	Brown dolomite-gray/brown, tan & marcasite/speckled chert 90-10, galena 1/10	
95	100	Brown dolomite-gray/brown, tan & marcasite/speckled chert 88-12, marcasite ½, trace galena	
100	110	Brown dolomite-gray/brown & tan chert 90-10, marcasite 3/10, few specks galena	
110	115	Pale brown dolomite-gray & gray/brown chert 92-8, marcasite ½	
115	120	Brown/gray dolomite-gray chert 96-4, limonite/stained clay 5, marcasite 3/10, few specks galena	
120	125	Gray/brown dolomite-gray chert 97-3, limonite/stained clay 1, marcasite 2, few specks galena	
125	130	Gray/brown dolomite-gray chert 95-5, marcasite 1½, few specks galena	
130	140	Pale brown dolomite-gray chert gray shale 95-2-3, marcasite 3, few specks galena	
140	150	Brown dolomite-gray dolomite-gray chert 93-5-2, marcasite 4	
150	160	Brown dolomite-dark buff dolomite-light gray chert 94-5-1, few specks gray shale, marcasite 5	
160	170	Buff dolomite-tan & g ray/brown chert 85-15, trace brown/buff clay, marcasite 6/10, a speck galena	
170	175	Buffish/brown dolomite-tan & brown chert 86-14, marcasite 8/10	
175	180	Brown dolomite-gray chert 95-5, marcasite 1	
180	182½	Pale brown dolomite-few specks calcite, marcasite 2	
182½	185	Pale brown dolomite-few specks calcite, marcasite 4	
185	187½	Brown/gray dolomite-dark buff dolomite 98-2, marcasite 5	GRAY 185
187½	190	Brown/gray dolomite-dark buff dolomite 99-1, marcasite 5	
190	192½	Brown/gray dolomite-dark buff dolomite 92-8, marcasite 7	
192½	195	Gray/brown dolomite-dark buff dolomite95-5, calcite ½, marcasite 5, blende 1/10	
195	197½	Brown dolomite-calcite 2, marcasite 6, blende 1/10	
197½	200	Brown dolomite-gray clay 95-5, calcite 2, marcasite 1, trace blende	BLUE 199.9
200	202½	Brown/gray dark/speckled dolomite-calcite 1, marcasite 3, blende 6/10	

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 63~~
Hole No. 37 (Continued)
Collar Elevation: 982.41'
Depth of Hole: 231.4' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/12/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
202½	205	Gray dark/speckled dolomite-brown dolomite 95-5, gray clay 3, marcasite 4, blende 1%	
205	207½	Brown & tan fossiliferous dolomitic limestone-trace brown shale, marcasite 2, blende 7/10	OIL 205
207½	210	Tan fossiliferous limestone-brown shale 98-2, marcasite 1, blende 4/10	
210	212½	Gray/brown fossiliferous limestone-gray clay 90-10, brown shale 3, marcasite 1, blende 8/10	CLAY 212.2
212½	215	Green clay-gray/brown fossiliferous limestone-trace phosphate, marcasite 8/10, blende 2/10	GLASS 215.5
215	217½	Dark brown dolomite (coarse cuttings)-gray clay 90-10, marcasite 7/10, blende 4/10	McGREGOR 218.5
217½	220	Gray dolomitic limestone-dark brown dolomite 60-40, marcasite ½, blende 1/10, trace calcite	
220	222½	Gray dolomitic limestone-marcasite 2/10, trace blende	
222½	225	Gray dolomitic limestone-marcasite 3/10, blende 1/10	
225	227½	Tan limestone & gray dolomitic limestone-marcasite 3/10, trace blende	
227½	230	Gray limestone-marcasite 1/10, few specks blende	

Water table: 58'

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
200	202½	1.55	4.70	nil.
202½	205	2.15	9.30	nil.
205	207½	1.25	4.30	nil.
207½	210	1.05	3.00	nil.
210	212½	1.35	3.20	nil.

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 64~~
Hole No. 38
Collar Elevation: 973.33'
Depth of Hole: 211.0' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/27/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown clay-trace buff dolomite
10	30	Buff dolomite-trace limonite
30	40	Buff dolomite-limonite 2/10
40	50	Buff dolomite-trace limonite
50	60	Coarse cuttings: Buff dolomite-brown clay 1, few specks limonite
60	65	Coarse cuttings: Dark buff dolomite-trace limonite
65	70	Coarse cuttings: Buff & dark buff dolomite-trace limonite
70	75	Dark buff dolomite-aspeck brown chert-limonite stained clay & brown clay 3, limonite 2/10
75	80	Buff dolomite-brown chert & dark buff chert-brown clay 90-7-3, limonite 3/10 DRAB 75
80	85	Buff dolomite-brown chert & dark buff chert 82-18, limonite 4/10
85	90	Buff dolomite-dark brown chert 92-8, galena 7/10
90	95	Coarse cuttings: Buff dolomite-dark brown chert 93-7, gray/brown dolomite 1, galena 1½%
95	100	Some Coarse Cuttings: Buff dolomite-brown & dark brown/buff chert 90-10, galena 2/10, trace marcasite
100	105	Buff dolomite-dark brown/buff chert 82-18, brown & limonite/stained clay 4, galena 4/10
105	110	Buff dolomite-dark brown/buff chert-gray/brown dolomite 80-15-5, trace galena
110	120	Buff dolomite-brown buff chert 93-7, thin trace galena
120	130	Buff dolomite-light brown & buff chert 90-10, thin trace galena
130	140	Buff dolomite-few specks tan chert-trace galena
140	150	Buff dolomite-tan chert 92-8, very thin trace galena
150	160	Dark buff dolomite-tan chert 94-6, marcasite 2/10, a speck galena
160	165	Coarse cuttings: Brown dolomite-gray/brown & tan chert-buff dolomite 70-25-5, marcasite 1
165	167½	Brown dolomite-dark buff dolomite-tan & brown chert 60-30-10, marcasite 4
167½	170	Brown dolomite-dark buff dolomite-tan & brown chert 50-30-20, marcasite 6
170	172½	Brown dolomite-tan & brown chert-dark buff dolomite 70-27-3, marcasite 8
172½	175	Brown dolomite-tan & brown chert-dark buff dolomite 75-20-5, marcasite 7
175	177½	Brown dolomite-tan & brown chert-dark buff dolomite 80-16-4, marcasite 6 GRAY 175 ?
177½	180	Brown dolomite-tan & brown chert-dark buff dolomite 85-10-5, trace gray dolomite-marcasite 4, blende 1/10
180	182½	Mostly brown dolomite & chert ravellings-few coarse cuttings, gray marcasite/speckled dolomite, marcasite 8, trace blende
182½	185	Mostly brown dolomite & chert ravellings-little gray marcasite/speckled dolomite & blue/gray clay, marcasite 5, few specks blende

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 64~~
Hole No. 38 (Continued)
Collar Elevation: 973.33'
Depth of Hole: 211.0' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 12/27/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
185	187½	Mostly brown dolomite & chert & dark buff dolomitic ravellings - trace gray marcasite/speckled dolomite, marcasite 4, speck blende
187½	190	Mostly brown dolomite & chert & dark buff dolomitic ravellings-gray clay 8, little gray dark/speckled dolomite, marcasite 3, few specks blende BLUE 189 ?
190	192½	Ravelling from overlying beds-gray dark/speckled dolomite 98-2, marcasite 2½, few specks blende
192½	195	Ravelling from overlying beds-trace brown clay, few specks gray dark/speckled dolomite-marcasite 3, speck blende
195	197½	Brown dolomitic ravellings & a trace of chert ravelling-tan oilrock limestone 1, marcasite 8, few specks blende OIL 195 ?
197½	200	Mostly brown dolomitic ravellings-tan limestone 3, trace gray marcasite/speckled dolomitic ravellings, trace calcite, marcasite 15, speck blende
200	202½	Mostly brown dolomite & gray marcasite/speckled dolomitic ravellings, tan limestone 1, dark gray fossiliferous limestone 1, calcite 1, a speck phosphate, marcasite 7, few specks blende CLAYBED 201½ ?
202½	205	Mostly brown dolomite & gray marcasite/speckled dolomitic ravellings, light brown glassrock limestone 4, trace gray clay, trace dark gray fossiliferous limestone & green shale, calcite ½, marcasite 10, trace blende GLASS 203 ?
205	207	Brown dolomite & gray marcasite/speckled dolomite ravellings-brown glassrock limestone 85-15, marcasite 7, trace blende, trace calcite
207	208½	Gray marcasite/speckled dolomitic ravellings-brown limestone 80-20, trace dark brown shale, trace calcite, marcasite 8, trace blende
208½	211	Gray marcasite/speckled dolomitic ravellings-brown & dark brown limestone 75-25, trace calcite, marcasite 8, trace blende McGREGOR ?????

Extremely loose formation. Would have been cased if a solid formation was found. Formation "Tops" cannot be called with any degree of accuracy. Driller reported sticky clay-like formation 208½-211 & some light gray clay stuck to bit - none found in sample.

Water table: 49'

Depth From	Depth To	Assays ZnS	FeS2	PbS
85	90	0.20	3.90	4.95
90	95	0.30	3.90	3.22

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 65~~
Hole No. 39
Collar Elevation: 965.7'
Depth of Hole: 208.0' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 1/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay, fine buff dolomite 80-20
5	10	Dark brown clay & reddish-brown clay 50-50, fine buff dolomite 10
10	15	Dark buff dolomite (Coarse), brown clay 95-5, few specks limonite
15	20	Dark buff dolomite, few specks limonite & marcasite
20	40	Dark buff limonite-speckled dolomite, few coarse chips limonite
40	45	Dark buff dolomite, t race brown-buff clay, a speck marcasite
45	60	Dark buff dolomite
60	65	Dark buff dolomite, brown-buff dolomite 80-20
65	70	Dark buff dolomite & brown-buff dolomite, brown chert 98-2 DRAB - 67½
70	75	Coarse cuttings: Buff dolomite, brown chert 94-6, trace dark gray clay
75	80	Coarse cuttings: Buff dolomite & brown dolomite, dark brown chert & brown chert 82-18, dark gray clay 1, few specks marcasite
80	85	Dark buff dolomite, gray & dark brown clay, brown chert 89-8-3, few specks marcasite
85	90	Dark buff dolomite, brown chert, gray clay 94-5-1, few specks marcasite
90	95	Buffish-brown dolomite, brown & gray chert, dark gray clay 83-15-2, a speck marcasite
95	100	Brown-buff dolomite, dark brown-buff chert, dark gray clay 92-5-3, a speck marcasite
100	105	Brown-buff dolomite, brown chert 70-30
105	110	Buff dolomite, dark buff chert 92-8, trace dark gray clay, few specks marcasite
110	115	Buff dolomite, brown & buff chert 88-12, few specks marcasite
115	120	Buff dolomite, buff chert 92-8, a speck galena, few specks marcasite
120	130	Buff dolomite, buff, brown & tan chert 90-10, dark gray clay 1
130	140	Buff dolomite, buff & brown chert 93-7, dark gray clay 1, few specks marcasite
140	150	Buff dolomite, brown chert 99-1, dark gray clay 5, few specks marcasite
150	155	Buff dolomite, buff & brown chert, dark gray clay 50-45-5, few specks marcasite
155	160	Brown & buff chert, dark buff dolomite 60-40, few specks marcasite
160	165	Buff & tan chert, dark buff dolomite 85-15, few specks marcasite
165	167½	Coarse cuttings: Dark buff dolomite, brown & tan chert 80-20, a speck limonite & marcasite
167½	170	Coarse cuttings: Dark buff dolomite, brown chert 92-8, trace dark gray clay, a speck marcasite
170	172½	Coarse cuttings: Dark buff dolomite, brown chert 96-4, trace dark gray clay, a few coarse cuttings appear to be oxidized "Gray" dolomite GRAY - 170 ?
172½	175	Coarse cuttings: Buff dolomite, pale green clay 95-5, brown chert ravellings 4, limonite (coarse) 3
175	177½	Dark buff dolomite & pale buff dolomite, brown chert ravellings 5, trace gray clay, limonite 8/10
177½	180	Buff dolomite, chert ravellings 6, trace limonite

Continued

Lafayette County
~~Sec. Ref. 150~~

~~Serial No. 65~~
Hole No. 39 (Continued)
Collar Elevation: 965.7'
Depth of Hole: 208.0' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 1/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
180	182½	Buff dolomite & brown chert ravellings 90-10, few specks limonite & marcasite	
182½	185	Buff dolomite & brown chert ravellings, dark gray dolomite & gray clay 95-5, marcasite 3	BLUE - 184
185	187½	Dark buff dolomite, dark gray marcasite-speckled dolomite 85-15, marcasite 2	
187½	190	Coarse cuttings: Dark buff dolomite & brown chert ravellings, dark gray marcasite-speckled dolomite 60-40, marcasite 20	
190	192½	Coarse cuttings: Dark buff dolomite & brown chert ravellings, marcasite 10	OIL - 191 (?)
192½	195	Dark buff dolomite, & brown chert ravellings, trace tan fossiliferous limestone & brown clay, marcasite 4	
195	197½	Dark buff dolomite & brown chert ravellings, trace tan fossiliferous limestone, green clay 25, marcasite 3	
197½	200	Green clay, buff dolomite & brown chert ravellings 80-20, marcasite 1, a speck blende	CLAY - 197
200	202½	Dark buff dolomite & brown chert ravellings, dark brown dolomite, marcasite 6, few specks blende	GLASS - 200 ?
202½	205	Dark buff dolomite & brown chert ravellings 98-2, few coarse chips brown-gray limestone, marcasite 4/10, specks calcite	
205	207½	Dark buff dolomite & chert ravellings, gray dolomitic limestone 95-5, a speck chocolate brown shale, marcasite 3/10	

Water table: 41'

Lafayette County
~~Sec. [illegible] f. 150~~

~~Serial No. 66~~
Hole No. 40
Collar Elevation: 1021.61'
Depth of Hole: 271.5' (Measurement by steel tape)
Location: Calvert Estate (Tract #1)

Date completed: 1/23/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	15	Brown clay	
15	20	Buff dolomite, trace limonite	
20	30	Buff dolomite, trace limonite, a speck marcasite	
30	45	Buff dolomite, few specks limonite	
45	90	Buff dolomite	
90	100	Buff dolomite, few specks limonite	
100	110	Buff & brown-buff dolomite, a speck limonite	
110	115	Brown-buff dolomite & buff dolomite	
115	120	Brown dolomite, a speck brown chert, thin trace marcasite	
120	125	Brown dolomite, gray-brown chert 94-6, trace marcasite	DRAB - 120
125	140	Brown dolomite, gray-brown & dark gray chert 92-8, marcasite 4/10	
140	150	Brown dolomite, gray chert 96-4, trace tan chert, marcasite 4/10	
150	160	Brown-gray dolomite, light gray & white chert 90-10, marcasite 7/10	
160	170	Gray-brown dolomite, gray & light gray chert 92-8, marcasite 5/10	
170	180	Brown dolomite, gray-brown chert 95-5, marcasite 4/10	
180	185	Brown dolomite, white & tan chert 96-4, marcasite 1/10	
185	195	Fine Cuttings: Brown dolomite, tan chert 99-1, marcasite 3/10	
195	205	Brown dolomite, tan & light brown chert 90-10, trace calcite, marcasite 2/10	
205	210	Brown dolomite, tan & light brown chert 94-6, marcasite 4/10	
210	215	Brown dolomite, tan chert 97-3, marcasite 3/10	
215	220	Brown dolomite, trace calcite, marcasite 6/10	
220	225	Gray dolomite, brown dolomite 90-10, marcasite 5/10 (fine cuttings)	GRAY - 220½
225	230	Gray dolomite, marcasite 4/10	
230	232½	Brown-gray dolomite, few specks calcite, marcasite 2/10	
232½	235	Brown-gray dolomite, marcasite 3/10	
235	237½	Gray dark-speckled dolomite, brown-gray dolomite 80-20, marcasite 3/10	BLUE - 235½
237½	240	Gray dark-speckled dolomite, marcasite 1/10	
240	242½	Dark gray dark-speckled dolomite, trace gray clay, marcasite 1/10	
242½	245	Tan fossiliferous limestone, gray dark-speckled dolomite 90-10, marcasite 1/10	OIL - 242.7
245	250	Brown & tan fossiliferous limestone, trace brown shale, marcasite 1/10	
250	255	Brown limestone, dark brown shaly limestone 97-3, trace marcasite	
255	257½	Gray fossiliferous limestone, trace marcasite	
257½	260	Gray-brown limestone, dark gray fossiliferous limestone 70-30, trace marcasite	CLAY - 257½
260	262½	Brown limestone, some bentonite & dark gray fossiliferous limestone, trace marcasite	GLASS - 258¼
262½	265	Brown & tan limestone, trace dark brown shale, trace marcasite	
265	267½	Dark brown & tan lime stone, trace chocolate brown shale, trace marcasite	
267½	270	Brown limestone, gray limestone & dolomitic limestone 60-40, chocolate brown shale 1, trace marcasite	McGREGOR - 269
270	271	Gray dolomitic limestone, gray shale 95-5, trace marcasite	

Driller's remark: GOOD drilling hole.

Water table: 90'

67a

Lafayette County
~~Sec. R~~ 151

~~Serial No. 79~~
Hole No. 4
Collar Elevation: 994.45'
Depth of Hole: 245.6' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 7/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Coarse cuttings buff dolomite, trace limonite & marcasite
10	25	Buff dolomite, some brownebuff dolomite, trace marcasite & limonite
25	40	Buff dolomite, some brown-buff dolomite, few specks marcasite & limonite
40	55	Buff dolomite, few specks limonite
55	70	Buff dolomite, few specks limonite
70	85	Brown-buff dolomite, thin trace marcasite
85	100	Light brown dolomite, trace marcasite, trace galena
100	105	Light brown dolomite, trace marcasite, few specks galena
105	110	Light brown dolomite, gray & tan chert 97-3, trace marcasite a speck galena DRAB - 105
110	120	Brown dolomite, brown & tan chert 99-1, trace marcasite, few specks galena
120	130	Brown dolomite, brown & tan chert 97-3, trace marcasite, few specks galena
130	140	Brown dolomite, gray & tan chert 96-4, trace marcasite, trace galena
140	150	Pale brown dolomite, gray chert 99-1, trace marcasite, a speck blende
150	160	Brown dolomite, gray & tan chert 97-3, calcite 3, trace marcasite
160	170	Brown dolomite, gray dolomite shale 6, marcasite 1/10
170	180	Pale brown dolomite, gray chert 97-3, trace marcasite
180	190	Light brown dolomite, brown & tan chert 97-3, trace marcasite
190	200	Light brown dolomite, brown & tan chert 98-2, trace marcasite
200	205	Gray-brown dolomite, trace marcasite GRAY 200
205	210	Gray-brown dolomite, trace marcasite, trace blende
210	212½	Gray-brown dolomite, trace calcite, trace marcasite, trace blende
212½	215	Gray-brown dolomite, calcite ½, marcasite ½, blende 1
215	217½	Gray-brown dolomite, gray dark-speckled dolomite 80-20, marcasite 1, blende 1 BLUE - 217
217½	220	Gray dark-speckled dolomite, buff dolomite 10, marcasite 1, blende 1
220	222½	Brown & light brown limestone, gray dark-speckled dolomite & clay 80-20, marcasite 1, blende 1½, OIL - 220.5
222½	225	Brown & light brown limestone, marcasite 2/10, blende 1/10
225	227½	Brown & light brown limestone, trace marcasite, trace blende
227½	230	Brown & light brown limestone, trace marcasite, trace blende
230	232½	Green shale & gray clay, light brown limestone 80-20, trace phosphate, trace marcasite, few specks blende CLAY - 230.5
232½	235	Dark brown dolomite limestone, green clay 80-20, trace marcasite, few specks blende GLASS - 233
235	237½	Brown & light brown dolomite limestone, gray dolomite limestone 80-20, trace marcasite, few specks blende McGREGOR - 237

Continued

Lafayette County

~~Sec. [illegible] 151~~

~~Serial No. 79~~
Hole No. 4 (Cont'd)
Collar Elevation: 994.45'
Depth of Hole: 245.6' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 7/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
237½	240	Gray-brown & gray dolomite limestone, gray & green shale 4, trace marcasite, a speck blende
240	242½	Gray-brown & gray dolomite limestone, gray & green shale 3, trace marcasite, few specks blends
242½	245	Light gray & gray-brown dolomite limestone, few specks marcasite

Water table: 66.5'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
212½	215	2.90	5.40	nil.
215	217½	1.10	6.50	"
217½	220	1.10	5.60	"
220	222½	1.45	4.30	"
222½	225	0.85	3.90	"

Serial No. 80
Hole No. 5
Collar Elevation: 998.46'
Depth of Hole: 248.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 7/25/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H.W. Davis, E.J.Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil & clay
5	10	Brown-buff clay
10	15	Coarse cuttings buff dolomite, trace limonite
15	30	Buff dolomite, speck limonite
30	45	Buff dolomite, specks limonite
45	60	Brown-buff & buff dolomite, few specks limonite, speck galena
60	75	Brown-buff dolomite, trace limonite, few specks galena
75	90	Brown-buff dolomite, few specks limonite, few specks galena
90	105	Brown-buff dolomite, trace limonite, specks galena
105	110	Pale brown dolomite, trace limonite, specks galena & marcasite
110	115	Pale brown dolomite, limonite 1/10, thin trace galena, thin trace marcasite
115	120	Brown dolomite, brown & tan chert 99-1, trace marcasite, limonite 1/10 DRAB - 118
120	125	Brown dolomite, gray & brown chert 99-1, marcasite ½
125	130	Brown dolomite, gray & brown chert 95-5, marcasite 1/10
130	140	Brown dolomite, gray chert 97-3, marcasite 3 (some marcasite-speckled dolomite & chert)

Continued

Lafayette County
~~Sec. R[illegible] 151~~

~~Serial No. 80~~
Hole No. 5 (Cont'd)
Collar Elevation: 998.46'
Depth of Hole: 248.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 7/25/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: H.W. Davis & E.J.Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
140	150	Brown dolomite, gray chert 95-5, marcasite 2 (some marcasite-speckled dolomite & chert)	
150	160	Gray-brown dolomite, gray chert 97-3, marcasite 1½, (some marcasite-speckled dolomite)	
160	170	Gray-brown dolomite, tan chert 98-2, marcasite 1½ (some marcasite-speckled dolomite)	
170	180	Brown dolomite, tan chert 99-1, marcasite ½	
180	190	Brown dolomite, trace tan chert, marcasite ½	
190	200	Brown dolomite, gray chert 95-5, marcasite 1	
200	205	Brown dolomite, gray & tan chert 97-3, marcasite 1	
205	210	Brown dolomite, gray & tan chert 96-7, marcasite 1	
210	215	Brown dolomite, trace chert, trace calcite, marcasite 1	
215	220	Light gray-brown dolomite, marcasite ½	GRAY - 215?
220	222½	Brown dolomite (some marcasite-speckled) marcasite 1	
222½	225	Brown dolomite (some marcasite-speckled) marcasite 1	
225	227½	Brown dolomite, gray dark-speckled dolomite & clay 80-20, marcasite 1	BLUE - 227
227½	230	Gray dark-speckled dolomite, marcasite ½	
230	232½	Brown & tan limestone, trace shale 3, thin trace marcasite	OIL - 230
232½	235	Brown & tan limestone, trace shale 5, trace marcasite-speck galena	
235	237½	Gray-brown & tan limestone, brown shale 10, thin trace marcasite & galena	
237½	240	Gray shale & gray clay, brown limestone 5, thin trace marcasite	
240	242½	Brown & tan limestone, dark brown dolomite limestone 30, trace marcasite	
242½	245	Gray marcasite-speckled dolomite limestone, brown dolomite limestone 80-20, marcasite 1	McGREGOR - 243
245	248	Gray dolomite limestone, trace green shale & calcite, trace marcasite	

Water table: 71.5'

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Lafayette County
~~Sec. R~~ [illegible] ~~151~~

~~Serial No. 81~~
Hole No. 6
Collar Elevation: 949.50'
Depth of Hole: 183.0'
Location: Francis M. Calvert

Date completed: 7/30/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff dolomite & soil	
10	25	Buff dolomite, few specks limonite	
25	40	Buff dolomite, few specks limonite, specks marcasite	
40	45	Light brown dolomite-few specks limonite	
45	50	Light brown dolomite-specks tan chert, trace limonite	DRAB - 50
50	55	Brown dolomite-brown & gray chert 99-1, few specks marcasite trace limonite	
55	60	Brown dolomite-brown & gray chert 94-6, marcasite 1/10	
60	70	Brown dolomite-brown & gray chert 95-5, marcasite 1	
70	80	Light brown dolomite-gray & tan chert 97-3, marcasite 1/2	
80	90	Pale gray dolomite-gray & white chert 93-7, marcasite 1/10	
90	100	Light brown dolomite-tan chert 97-3, trace marcasite	
100	110	Light brown dolomite-light gray & tan chert 96-4, trace marcasite	
110	120	Light brown dolomite-light gray & tan chert 99-1, marcasite 1	
120	125	Brown dolomite-trace gray chert, gray, brown shale 3, marcasite 1/2	
125	130	Small recovery, light brown dolomite-trace chert, marcasite 2½	
130	135	Very small recovery: Coarse cuttings, brown dolomite-gray chert 96-4, marcasite 3	
135	140	Small recovery: Brown dolomite-trace tan chert marcasite ½	
140	145	Brown dolomite-tan chert 95-5, trace marcasite	
145	150	Pale brown dolomite-marcasite 2½	
150	155	Gray dolomite-brown dolomite 80-20, marcasite 2	GRAY - 151
155	157½	Gray dolomite-brown dolomite 10, marcasite 1½	
157½	160	Gray, brown dolomite-marcasite 1	
160	162½	Gray, brown dolomite-marcasite ½	
162½	165	Gray dark speckled dolomite-gray, brown dolomite 60-40, gray clay 10, marcasite 1/2	BLUE 163½
165	167½	Dark gray, dark speckled dolomite, marcasite 1½	
167½	170	Brown & tan fossiliferous limestone-gray shale 5, marcasite 8, Blende 1/2	Oil - 167½
170	172½	Brown & tan fossiliferous limestone-brown clay 10, brown shale 5, marcasite 4, blende 1/2, few specks galena	
172½	175	Gray clay & green chale-brown & tan limestone 10, trace phosphate, marcasite 1½	CLAY - 172½
175	177½	Brown & tan limestone-dark brown dolomitic limestone 15, trace gray clay, marcasite 1, few specks blende & galena	GLASS - 175
177½	180	Brown & tan limestone-brown shale 3, trace green shale, marcasite 1, few specks blende & galena	MCGREGOR - 180
180	182½	Gray dolomitic limestone-marcasite 1	

Water table: 13'

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Lafayette County
~~Sec. R~~ 151

~~Serial No. 82~~
Hole No. 7
Collar Elevation: 932.08'
Depth of Hole: 156' (Measurement with steel tape)
Location: Francis M. Calvert

Date completed: 8/4/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil & brown limestone stained clay
5	10	Buff dolomite & brown clay, limonite 5
10	15	Buff dolomite, limonite 1
15	25	Light brown dolomite, light brown chert 95-5, limonite 1 DRAB - 15
25	35	Brown dolomite, brown & gray chert 97-5, marcasite ½, few specks blende.
35	45	Brown dolomite, brown chert 97-3, marcasite ½, few specks blende & galena.
45	55	Brown dolomite, brown chert marcasite specks, 93-7, marcasite 4, speck blende & galena.
55	65	Brown dolomite, tan chert 93-7, marcasite 2½
65	75	Brown dolomite, brown & tan chert 94-6, marcasite 2, speck blende & galena.
75	85	Brown dolomite, brown & tan chert 95-5, marcasite 2, trace blende.
85	95	Brown dolomite, brown & tan chert 97-3, marcasite 3, few specks blende & galena.
95	105	Brown dolomite, brown & tan chert 98-2, marcasite 1½
105	110	Small recovery brown dolomite, gray chert 95-5, marcasite 1½
110	115	Brown dolomite, brown tan chert 94-6, marcasite 1
115	120	Light brown dolomite, gray dolomite 60-40, marcasite 1 GRAY - 118'
120	125	Gray dolomite, marcasite 1, trace gray clay.
125	130	Light gray brown dolomite, marcasite 1
130	132½	Drak gray dolomite, gray dark specks dolomite 80-20, marcasite ½ BLUE - 132'
132½	135	Gray chert & specks dolomite, marcasite ½
135	137½	Gray chert & specks dolomite, marcasite, brown dolomite limestone & brown shale 90-10, gray clay marcasite ½ OIL - 137'
137½	140	Brown & tan dolomite limestone, marcasite ½
140	142½	Brown & tan dolomite limestone, light gray shale dolomite limestone, glauconite 5, marcasite ½ CLAY - 142½
142½	145	Gray clay & white & black mottled dolomite limestone, brown dolomite limestone 20, marcasite ½
145	147½	Gray clay, light brown dolomite limestone 60-40, trace marcasite
147½	150	Brown & light brown dolomite limestone, trace marcasite GLASS 147½
150	152½	Brown dolomite limestone, dark brown limey shale 10, gray shale 5, trace marcasite.
152½	155	Gray dolomite limestone, green shale 20, brown dolomite limestone 15, trace marcasite

Water table: 12'

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Lafayette County
~~Sec. [illegible] 151~~

~~Serial No. 83~~
Hole No. 8
Collar Elevation: 959.55'
Depth of Hole: 175.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/28/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Soil and clay
15	20	Clay & some chert
20	25	Brown-buff dolomite, a speck chert, some brown clay DRAB - 25
25	30	Brown-buff dolomite, tan & light gray chert 99-1, trace limonite
30	40	Brown-buff dolomite, red & tan chert 95-5, limonite 3
40	50	Brown-buff & gray dolomite, gray & red chert 96-4, limonite 4, marcasite 1
50	55	Gray & brown dolomite, tan & red chert 96-4, trace marcasite, limonite 2
55	60	Buff dolomite, gray & tan chert 97-3, marcasite 1½
60	70	Buff dolomite, gray & light tan chert 99-1, trace marcasite
70	80	Buff & gray dolomite, gray chert 99-1, trace limonite
80	90	Light brown & buff dolomite, trace gray chert, trace limonite
90	100	Brown-buff dolomite, trace gray chert, marcasite 1/10
100	110	Buff & gray dolomite, trace gray chert, trace marcasite
110	120	Brown-buff dolomite, gray chert 98-2
120	125	Gray & buff dolomite, trace marcasite
125	130	Gray dolomite, trace marcasite GRAY - 125
130	135	Gray dolomite, marcasite 2/10
135	137½	Gray & light brown dolomite, trace marcasite
137½	140	Brown & gray dolomite, gray dark-speckled dolomite 80-20, marcasite 1/10 BLUE 139½
140	142½	Gray dark-speckled dolomite, trace gray clay, trace marcasite
142½	145	Gray dark-speckled dolomite, trace calcite, trace marcasite
145	147½	Gray dark-speckled dolomite, gray clay 3, gray shaly limestone 2, trace marcasite
147½	150	Gray & brown limy dolomite, trace brown shaly limestone, trace marcasite OIL - 147½
150	152½	Light brown dolomite limestone, brown limy shale 1, trace marcasite
152½	155	Brown & gray dolomitic limestone, brown limy shale 5, marcasite 1/10, specks blende
157½	160	Light brown & gray limestone, trace gray clay, brown limy shale ½, trace marcasite
160	162½	Gray and light brown dolomitic limestone, gray & green-gray shale 98-2 GLASS - 160
162½	165	Light brown & gray dolomitic limestone, trace marcasite
165	167½	Light brown & gray dolomitic limestone, trace green-gray shale, trace marcasite
167½	170	Light brown & gray limestone, trace marcasite
170	172½	Gray dolomitic limestone, trace brown shale McGREGOR - 170
172½	175	Gray & light gray dolomitic limestone, trace gray greasy shale

Water table: 36'

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 98~~
Hole No. 9
Collar Elevation: 997.92'
Depth of Hole: 145'
Location: Francis M. Calvert

Date completed: 1/26/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Brown clay, few coarse cuttings buff dolomite
10	15	Coarse cuttings: Buff dolomite
15	20	Coarse cuttings: Buff dolomite, brown-buff clay 90-10
20	30	Coarse cuttings: Buff dolomite
30	40	Coarse cuttings: Buff dolomite, little brown-buff clay, trace limonite
40	50	Coarse cuttings: Buff dolomite, few specks limonite
50	60	Dark buff dolomite, trace limonite
60	65	Dark buff dolomite, limonite 4
65	70	Extra dark buff dolomite, limonite 20
70	75	Coarse cuttings: dark buff dolomite, limonite 3
75	80	Coarse cuttings: dark buff dolomite, limonite 2
80	90	Coarse cuttings: dark buff dolomite, limonite 10
90	100	Buff dolomite, limonite ½
100	105	Buff dolomite (slightly calcareous), trace limonite
105	110	Buff dolomite, gray-brown chert & dark brown-buff chert 95-5, limonite 1 DRAB - 107½
110	115	Buff dolomite, dark brown-buff chert 80-20, limonite ½
115	120	Coarse cuttings: Buff dolomite, dark brown-buff chert 60-40, specks galena
120	125	Coarse cuttings: Buff dolomite, dark brown-buff chert 65-35, specks galena
125	130	Dark buff dolomite, dark brown-buff chert 80-20, limonite 10 specks galena
130	135	Coarse cuttings: Dark buff dolomite, dark brown-buff chert & brown chert 75-25, limonite 3/10, few specks galena
135	145	Buff dolomite, brown & dark brown-buff chert 92-8, limonite 2/10, a speck galena

Snapped bit off in hole--could not fish it out.
Hole abandoned by driller.

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 99~~
Hole No. 10
Collar Elevation: 997.92'
Depth of Hole: 237.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/31/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown clay
10	20	Coarse cuttings: Buff dolomite
20	25	Coarse cuttings: Buff dolomite, brown-buff clay 60-40
25	30	Coarse cuttings: Buff dolomite, brown-buff clay 70-30
30	40	Buff dolomite, trace limonite
40	75	Buff dolomite (some coarse cuttings), few specks limonite
75	85	Buff dolomite, trace limonite, trace brown clay
85	90	Buff dolomite (slightly calcareous), trace limonite
90	100	Buff dolomite, limonite stained clay 95-5, limonite 2/10
100	105	Buff dolomite, brown, buff & gray clay 99-1, trace limonite
105	110	Buff dolomite, buff & brown chert 95-5, trace limonite stained clay DRAB - 107½
110	120	Buff dolomite, dark buff chert 85-15, trace limonite, trace galena
120	130	Buff dolomite, dark buff chert 70-30, trace limonite, thin trace galena
130	135	Coarse cuttings: Buff dolomite, dark buff chert 92-8, trace limonite
135	150	Buff dolomite, dark buff chert 88-12, trace gray chert, trace limonite, few specks galena
150	160	Buff dolomite, dark buff gray & gray-brown chert 80-20, marcasite & limonite 7/10, few specks galena
160	170	Buff dolomite, dark buff & gray chert 90-10, marcasite 1
170	180	Buff dolomite, dark buff & gray chert, brown dolomite (coarse cuttings) 85-12-3, marcasite 6/10
180	185	Coarse cuttings: Buff dolomite, brown dolomite, dark buff & gray chert 80-17-3, little buff clay & dark gray clay, marcasite 3/10
185	190	Coarse cuttings: Dark buffish-brown dolomite, buff dolomite & brown dolomite, dark buff chert 60-33-5-2, marcasite (coarse mass) 10
190	195	Extra coarse cuttings: Gray marcasite-speckled chert, buff dolomite 97-3, marcasite 15
195	200	Coarse cuttings: Buff dolomite, marcasite-speckled chert 50-50, marcasite 20
200	205	Coarse cuttings: Buff dolomite, marcasite-speckled chert 95-5, few cuttings brown dolomite & a couple coarse cuttings that might be "Gray", marcasite 5
205	210	Coarse cuttings: Buff dolomite, brown dolomite, marcasite-speckled chert & buff chert, few pieces gray marcasite-speckled coarse-grained dolomite, marcasite 4, a speck galena GRAY - 205 (?)
210	215	Coarse cuttings: Buff dolomite & brown dolomite & chert ravellings, gray dolomite & gray dark-speckled dolomite & gray clay, calcite 1, marcasite 2 BLUE - 212 (?)
215	220	Apparently 100% ravellings of buff dolomite & Marcasite-speckled chert, marcasite 9 Set small casing.
220	222½	Ravellings of buff dolomite & marcasite-speckled chert, marcasite 6
222½	225	Ravellings of buff dolomite & marcasite-speckled chert, tan fossiliferous limestone, dark gray cave clay 75-20-5, marcasite 5 OIL - 222½
225	227½	Brown limestone, no ravellings of dolomite or chert, marcasite 4 (May be ravelling)

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 99~~
Hole No. 10 (Continued)
Collar Elevation: 997.92'
Depth of Hole: 237.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/31/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
227½	230	Brown limestone, green clay 80-20, marcasite 2, few specks phosphate	CLAY - 229½
230	232½	Brown dolomitic limestone, gray fossiliferous limestone & bentonite 60-40, marcasite 1	GLASS - 231
232½	235	Brown dolomitic limestone, marcasite 4 (probably ravelling) little marcasite-speckled chert ravellings	
235	237½	Brown limestone, gray dolomitic limestone 80-20, marcasite 3 (probably ravelling	McGREGOR - 237

Water table: 87½'

Extremely cavy hole down to Oilrock, firm from Oilrock to McGregor. "Tops" are hard to find--very uncertain.
H.W.D.

Driller's remarks:
Open ground 90-100
Oxidized to 205
Set 227' of 4 7/8" casing

Laf[illegible]tte County
~~Sec. Ref. 151~~

~~Serial No. 100~~
Hole No. 11
Collar Elevation: 991.74'
Depth of Hole: 238.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Buff dolomite (coarse cuttings), few specks marcasite
10	20	Buff dolomite (coarse cuttings), few specks marcasite & limonite
20	30	Buff & dark buff dolomite, few specks limonite
30	45	Dark buff dolomite
45	60	Dark buff dolomite, limonite 1/10
60	75	Dark buff dolomite, trace limonite
75	80	Dark buff dolomite, brown dolomite 93-7
80	85	Brown dolomite, dark buff dolomite 80-20, marcasite 1/10
85	95	Brown calcareous dolomite, marcasite ½
95	100	Brown calcareous dolomite, buff dolomite 95-5, trace limonite-stained clay, marcasite 1, (fine cuttings)
100	105	Brown dolomite, marcasite 2, (rather coarse cuttings)
105	110	Brown dolomite (fine cuttings), chocolate brown shale, smoky white chert 92-5-3, marcasite 8/10 DRAB - 107½
110	115	Brown dolomite, gray chert 98-2, marcasite 3/10
115	125	Brown dolomite, gray & brown chert 90-10, marcasite ½
125	135	Brown dolomite, gray, brown & tan chert 82-18, marcasite 7/10, a speck galena
135	150	Brown-gray dolomite, light gray & white chert 89-11, trace chocolate brown shale, marcasite 4
150	160	Pale brown dolomite, gray & light brown chert 80-20, marcasite 2
160	170	Fine cuttings: light brown dolomite, white chert 95-5, marcasite 5
170	180	Brown dolomite, tan & gray chert 88-12, few specks gray shale, marcasite 2
180	190	Brown dolomite, tan & brown chert 92-8, marcasite 1, a speck galena
190	195	Brown dolomite, gray-brown & brown chert 90-10, marcasite 2
195	200	Coarse cuttings: Pale brown dolomite, gray-brown chert 70-30, marcasite 2
200	205	Coarse cuttings: coarse-grained light gray dolomite, gray-brown chert 90-10, marcasite 8
205	207½	Coarse cuttings: coarse-grained light gray dolomite, gray-brown chert 97-3, marcasite 6
207½	210	Coarse cuttings: coarse-grained light gray dolomite, marcasite 3
210	212½	Coarse grained brown-gray dolomite, marcasite 4
212½	215	Coarse grained brown-gray dolomite, (coarse cuttings), marcasite 7
215	217½	Coarse grained brown-gray dolomite (coarse cuttings), gray clay 95-5, marcasite 2
217½	220	Extra coarse cuttings: Brown-gray dolomite, gray chert 92-8, (evidently entire sample is ravellings), marcasite 3/10
220	222½	Coarse cuttings: Brown-gray dolomite & gray chert ravellings, tan fossiliferous limestone 95-5, marcasite 1 OILROCK - 220.0 ?
222½	225	Coarse cuttings: Brown-gray dolomite & gray chert ravellings, tan limestone 80-20, marcasite 4

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 100~~
Hole No. 11 (Continued)
Collar Elevation: 991.74'
Depth of Hole: 238.0 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
225	227½	Coarse cuttings: Ravellings--tan limestone 80-20, marcasite 3	CLAY 227½
227½	230	Coarse cuttings: Ravellings, pale green clay 75-25, marcasite 1	GLASS - 230
230	232½	Coarse cuttings: Ravellings: dark brown dolomite 50-50, marcasite ½, chocolate brown shale 1	
232½	235	Coarse cuttings: Ravellings, gray dolomitic limestone 80-20, marcasite ½, a speck blende	
235	238	Coarse cuttings: Ravellings, gray dolomitic limestone 90-10, marcasite ½, a speck blende	McGREGOR - 232½

Water table: 67'

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 101~~
Hole No. 12
Collar Elevation: 941.78'
Depth of Hole: 190.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	1	Soil	
1	5	Coarse cuttings: dark buff dolomite	
5	20	Coarse cuttings: dark buff dolomite, trace limonite	
20	25	Brown-buff dolomite, trace limonite	
25	35	Buffish-brown dolomite, few specks limonite & marcasite	
35	40	Brown & buffish-brown dolomite, few specks marcasite	
40	45	Brown-buff dolomite, marcasite 2/10	
45	50	Buffish-brown dolomite (some marcasite-speckled), marcasite 2, specks blende	
50	55	Brown dolomite (some marcasite-speckled), marcasite 2, a speck blende	
55	60	Light brown dolomite, dark brown shale, brown chert 95-4-1, marcasite 5, trace blende	DRAB - 58
60	65	Brown dolomite, marcasite-speckled chert 93-7, marcasite 2, blende 3/10	
65	70	Brown dolomite, marcasite-speckled chert, & brown chert 70-30, marcasite 5, specks blende	
70	75	Brown dolomite, gray & brown chert 88-12, marcasite 1, specks blende	
75	80	Pale brown dolomite, light brown-gray chert 95-5, marcasite 2/10, blende 1/10	
80	85	Brown dolomite, light gray marcasite-speckled chert 92-8, marcasite 4, blende ½	
85	90	Pale brown dolomite, gray & white chert 82-18, dark brown shale 1, marcasite 3, blende 4/10	
90	95	Brown-gray dolomite, gray & white chert 88-12, dark brown shale 2, marcasite 2, blende 3/10	
95	100	Brown-gray dolomite, gray chert 96-4, trace dark brown shale, marcasite 1, few specks blende	
100	105	Gray-brown dolomite, gray chert 94-6, marcasite 3/10	
105	110	Gray-brown marcasite-speckled dolomite, marcasite ½	
110	115	Brown dolomite, gray chert 97-3, marcasite 4, trace blende	
115	120	Light brown dolomite, tan chert 99-1, marcasite 9, few specks blende	
120	130	Light brown dolomite, tan chert 97-3, marcasite 2	
130	140	Brown dolomite, tan & brown chert 94-6, marcasite 3	
140	145	Brown dolomite, light brown & brown chert 92-8, marcasite 4/10	
145	150	Brown dolomite, gray-brown & marcasite-speckled chert 65-35, marcasite 3/10	
150	155	Brown dolomite, trace tan chert, marcasite 20	
155	160	Brown-gray dolomite, marcasite 8	GRAY - 155
160	165	Gray dolomite, gray clay 99-1, marcasite 6	
165	167½	Gray dolomite, marcasite 4	
167½	170	Brown-gray dolomite, marcasite 6	
170	172½	Brown-gray dolomite, gray clay 50-50, marcasite 1	BLUE - 171.2
172½	175	Gray dark-speckled dolomite & brown dolomite 80-20, marcasite 5	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 101~~
Hole No. 12 (Continued)
Collar Elevation: 941.78'
Depth of Hole: 190.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
175	177½	Brown fossiliferous dolomitic limestone, gray clay, gray dark-speckled dolomite 60-20-20, marcasite 1	OIL - 176
177½	180	Brown marcasite-speckled dolomitic limestone, marcasite 18	
180	182½	Brown fossiliferous dolomitic limestone, brown clay 95-5, brown shale 1, marcasite 7	
182½	185	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 4, few specks blende, few specks phosphate	CLAY - 184
185	187½	Coarse cuttings: Brown dolomitic limestone, green clay 90-10, marcasite 2	GLASS - 185.3
187½	190	Coarse cuttings: Gray dolomitic limestone, brown dolomitic limestone 95-5, marcasite 1	McGREGOR - 187.6

Water table: 16½'

Depth From	Depth To	Assays ZnS	FeS_2	PbS	$ZnCO_3$
115	120	0.20	6.40	nil.	nil.
150	155	0.40	29.90	nil.	nil.
177½	180	0.35	28.40	nil.	nil.

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 102~~
Hole No. 13
Collar Elevation: 949.39'
Depth of Hole: 196.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/25/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Buffish brown clay
10	15	Coarse cuttings: Dark buff dolomite, residual chert 1
15	20	Coarse cuttings: Buff dolomite
20	30	Coarse cuttings: Buff dolomite, few specks limonite
30	40	Buff dolomite
40	45	Buff dolomite (trace calcareous dolomite)
45	50	Brown-buff dolomite (trace calcareous dolomite)
50	55	Brown-buff dolomite & buff dolomite, few specks marcasite
55	60	Buff dolomite, brown & gray-brown chert 94-6, trace chocolate brown shale, few specks marcasite DRAB - 57½
60	65	Dark buff dolomite, brown chert 93-7, few specks marcasite
65	70	Dark buff dolomite, brown dolomite, brown chert 70-20-10, specks marcasite
70	75	Fine cuttings: Dark buff dolomite, brown chert 99-1, brown clay 1, trace marcasite
75	80	Buff & brown-buff dolomite, brown chert & gray chert 85-15, trace brown clay & buff clay, marcasite 2/10
80	85	Buff dolomite, tan & brown chert 94-6, brown clay 1, trace marcasite
85	90	Buff dolomite, tan chert 91-9, brown clay 1, trace marcasite
90	95	Gray-brown dolomite, gray chert 88-12, brown clay 2, thin trace marcasite
95	100	Gray-brown dolomite, gray chert 92-8, trace brown clay, marcasite 1/10
100	105	Gray-brown dolomite, gray chert 98-2, dark gray & brown clay 4, trace marcasite
105	110	Gray-brown dolomite, gray chert 92-8, buff dolomitic ravellings 5, trace brown clay, trace marcasite
110	115	Gray-brown dolomite, gray chert 99-1, gray-brown clay ½, marcasite 8/10
115	120	Small recovery & coarse cuttings: Brown-buff dolomite, gray-brown & tan chert (coarse) 90-10, marcasite ½
120	125	Brown-buff dolomite, tan & gray chert 92-8, marcasite 3/10
125	130	Brown dolomite, tan chert 97-3, marcasite 2/10
130	135	Very small recovery: Coarse cuttings: Brown & buff dolomite, tan chert 99-1, gray & brown clay 2, trace marcasite
135	140	Brown dolomite, gray chert 99-1, trace brown clay, marcasite 4/10
140	145	Brown dolomite, tan chert 99-1, trace brown clay, marcasite 1½
145	150	Buffish-brown dolomite, brown & marcasite-speckled chert 80-20, marcasite 2
150	155	Very small recovery: Brown-buff dolomite, brown & gray chert 90-10, marcasite 4
155	160	Brown dolomite, tan & gray chert 99-1, marcasite 1
160	165	Very small recovery: Black clay, brown dolomite 90-10, trace marcasite GRAY - 160?

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 102~~
Hole No. 13 (Continued)
Collar Elevation: 949.39'
Depth of Hole: 196.5 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/25/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
165	170	No recovery	
170	172½	Gray dolomite (some coarse cuttings), marcasite 2/10	
172½	175	Very small recovery: Gray dolomite, considerable brown & buff dolomitic ravellings, marcasite 1	
175	177½	Gray dolomite, marcasite 3/10	
177½	180	Gray dolomite, marcasite 4	BLUE - 177½
180	182½	Very coarse cuttings: Gray dolomite, trace gray clay, few specks appear to be "Blue", marcasite ½	
182½	185	Coarse cuttings: Gray dolomite, few cuttings gray dark-speckled dolomite, trace green shale, dark brown shale 1, marcasite 2	OIL - 184.7 ?
185	187½	No sample	
187½	190	Green clay, some coarse cuttings, gray dolomite ravellings, trace brown shale, few fossils, marcasite 2/10	CLAY - 187½
190	192½	Gray clay, dark brown dolomite 80-20, few fossils, marcasite 3/10	GLASS - 192
192½	195	Gray dolomitic ravellings, trace chocolate brown shale, marcasite 2	
195	196½	Gray dolomitic ravellings, dark brown dolomite 75-25, marcasite 6 (Coarse cuttings)	
196½	197½	Ravellings from all overlying beds. (Spent 3 hours trying to cut this last foot.) Hole stopped by geologist, marcasite 1	McGREGOR - not cut estimated 198'

Very loose and fractured hole.

Water table: 24'

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 103~~
Hole No. 14
Collar Elevation: 1008.84'
Depth of Hole: 254.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 3/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	15	Brown-buff clay	
15	20	Buff dolomite, buff clay 75-25, limonite 8	
20	30	Buff dolomite, brown clay 98-2, limonite I	
30	40	Coarse cuttings: buff dolomite, brown clay 99-1, trace limonite	
40	70	Buff dolomite, few specks limonite	
70	90	Buff dolomite	
90	100	Dark buff dolomite	
100	110	Dark buff dolomite, trace calcite	
110	115	Buff & dark buff dolomite, dark buff & gray cave filling ½	
115	130	Buff & dark buff dolomite	
130	135	Buff dolomite, light brown chert 93-7	DRAB - 130
135	140	Coarse cuttings: Buff dolomite, brown chert 85-15	
140	145	Coarse cuttings: Buff dolomite, brown & gray chert 90-10, a speck marcasite	
145	150	Coarse cuttings: buff dolomite, brown chert 88-12	
150	155	Coarse cuttings: Buff dolomite, brown chert 97-3	
155	165	Coarse cuttings: Buff dolomite, brown & buff chert 91-9	
165	175	Buff dolomite, brown & buff chert 92-8, trace gray clay	
175	185	Dark buff dolomite, brown & tan chert 92-8	
185	190	Buff & dark buff dolomite, tan chert 94-6, trace dark buff & gray clay	
190	195	Dark buff dolomite, tan, brown & buff chert 96-4	
195	200	Very small recovery: Buff dolomite, brown clay, brown chert 94-5-1	
200	205	Gray-brown dolomite, dark buff dolomite, tan & brown chert 50-45-5, few specks marcasite	
205	210	Buff dolomite, light brown-buff clay, dark gray clay 85-10-5, trace tan chert, few specks marcasite	
210	215	Coarse cuttings: Buff dolomite & dark brown-buff calcareous dolomite, trace tan chert, calcite 5	
215	220	Brown-buff coarse-grained dolomite, tan chert 75-25, few specks marcasite	
220	225	Coarse cuttings: Gray coarse-grained dolomite, tan & brown chert 60-40, few specks green shale, buff dolomitic ravellings 5, thin trace marcasite	GRAY - 220
225	227½	Coarse cuttings: Gray coarse-grained dolomite, few specks green shale, trace marcasite, some buff dolomite & tan chert ravellings	
227½	230	Coarse cuttings: Brown dolomite, tan & brown chert ravellings, buff dolomite ravellings 50-40-10, thin trace marcasite, a speck blende	
230	232½	Coarse cuttings: gray-brown dolomite, tan chert, buff dolomite 70-20-10, thin trace marcasite	
232½	235	Extra coarse cuttings: Brown dolomite, tan & brown chert, buff dolomite 50-47-3, few specks marcasite	
235	237½	Coarse cuttings: gray-brown dolomite, tan & brown chert, buff dolomite, gray clay 60-30-8-2, thin trace marcasite	BLUE - 235
237½	240	Extra coarse cuttings: gray-brown dolomite, tan chert, gray clay, buff dolomite 75-10-10-5, trace marcasite	
240	242½	Coarse cuttings: Brown dolomite, tan chert, buff dolomite 60-20-20, all ravelling, few specks marcasite	OILROCK - 240
242½	245	Ravellings from overlying beds, trace fossils, few specks marcasite	

Continued

Lafayette County
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~~Serial No. 103~~
Hole No. 14 (Continued)
Collar Elevation: 1008.84'
Depth of Hole: 254.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 3/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
245	247½	Ravellings from overlying beds, green clay 60-40, few fossils, trace marcasite CLAY - 245
247½	250	Coarse cuttings: Ravellings from overlying beds, dark brown dolomite 50-50, trace marcasite GLASS - 247½
250	252½	Ravellings from overlying beds, brown dolomite & limestone 95-5, thin trace marcasite
252½	254	Ravellings from overlying beds, gray dolomitic limestone, brown limestone 57-33-10, few specks marcasite McGREGOR - 253½

Water table: 66'

Very loose, cavy hole
No assays

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Serial No. 104
Hole No. 15
Collar Elevation: 937.13'
Depth of Hole: 176.9'
Location: Francis M. Calvert

Date completed: 4/28/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay & soil
5	10	Buff dolomite & brown clay
10	20	Buff dolomite, coarse cuttings
20	30	Buff & brown dolomite, specks limonite, few coarse cuttings
30	35	Buff & light brown dolomite, specks limonite, specks marcasite
35	40	Light brown & buff dolomite, trace marcasite
40	45	Light brown buff dolomite (50-50), gray chert 99-1, marcasite 1/10 DRAB - 42.5
45	50	Light brown dolomite, gray chert 97-3, brown shale 2, marcasite 3, blende 1/10, trace galena
50	55	Brown dolomite, gray chert 90-10, marcasite 3-5/10, blende 1/10, few specks galena
55	60	Brown dolomite, gray chert 93-7, marcasite 4-5/10, trace blende
60	70	Brown dolomite, gray chert 92-8, marcasite 3-5/10, trace blende
70	75	Brown dolomite, gray chert 97-3, marcasite 3, trace blende, trace galena
75	80	Brown dolomite, gray chert 90-10, marcasite 2, trace blende
80	90	Brown dolomite, gray chert 94-6, marcasite 5/10
90	100	Brown dolomite, gray chert 95-5, marcasite 5/10
100	110	Brown dolomite, gray & tan chert 95-5, marcasite 1
110	120	Brown dolomite, gray & tan chert 97-3, marcasite 1, specks blende
120	130	Brown dolomite, gray & tan chert 94-6, marcasite 3/10

Continued

Lafayette County
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~~Serial No. 104~~
Hole No. 15 (Continued)
Collar Elevation: 937.13'
Depth of Hole: 176.9'
Location: Francis M. Calvert

Date completed: 4/28/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
130	135	Gray dolomite, brown dolomite (40-60), gray chert 99-1, marcasite 2/10 GRAY - 133
135	137½	Gray dolomite, trace gray-white clay, marcasite 1/10, specks blende
137½	140	Gray dolomite, marcasite 1/10
140	142½	Gray-brown dolomite, marcasite 2/10
142½	145	Gray dolomite, marcasite 1/10
145	147½	Dark gray speckled dolomite, gray dolomite (40-60), marcasite 1/10 BLUE - 146½
147½	150	Dark gray speckled dolomite, trace calcite, marcasite 1/10
150	152½	Dark gray speckled dolomite, marcasite 1/10
152½	155	Dark gray speckled dolomite, gray clay 1, marcasite trace
155	157½	Dark brown & tan dolomitic limestone, calcite 1/10, trace marcasite OIL - 155
157½	160	Dark brown & tan dolomitic limestone, calcite 1/10, trace marcasite, medium coarse cuttings
160	162½	Dark brown & tan dolomitic limestone, brown shale 1, trace calcite, marcasite 1/10, few specks galena
162½	165	Brown & tan dolomitic limestone, gray clay 1, marcasite 1/10, (some Blue ravellings) CLAY - 165
165	167½	Gray-white clay, brown dolomitic limestone (20-80), trace marcasite GLASS - 165½
167½	170	Tan dolomitic limestone, green shale 1, trace calcite, trace marcasite
170	172½	Tan dolomitic limestone, dark brown shale 1, green shale 1, trace calcite, trace marcasite
172½	176	Gray dolomitic limestone, tan dolomitic limestone (50-50), trace marcasite McGREGOR - 174

Lafayette County
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~~Serial No. 105~~
Hole No. 16
Collar Elevation: 954.06'
Depth of Hole: 205.6'
Location: Francis M. Calvert

Date completed: 4/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Brown clay	
10	15	Buff dolomite-trace limonite	
15	20	Buff dolomite, trace limonite, medium coarse cuttings	
20	30	Buff dolomite-brown clay 1-trace limonite	
30	40	Buff dolomite	
40	45	Pale buff dolomite-buff clay 20-trace limonite	
45	55	Buff & pale buff dolomite-trace calcite-trace limonite-trace marcasite	
55	65	Buff/brown dolomite-marcasite 1½	
65	70	Buff/brown dolomite-brown dolomite-few specks gray chert, marcasite 1/10	DRAB 70
70	75	Brown dolomite-gray chert 95-5, marcasite 4/10	
75	80	Brown dolomite-gray chert 93-7, marcasite 4	
80	90	Brown dolomite-gray & tan chert 94-7, marcasite 4	
90	100	Brown dolomite-gray & tan chert 98-2, calcite 1½, marcasite 2	
100	110	Brown & gray/brown dolomite-gray & tan chert 94-6, gray/white clay 1, calcite 3/10, marcasite 7/10	
110	120	Brown & gray brown dolomite-gray-tan & brown chert 91-9 marcasite 3/10	
120	130	Brown dolomite-gray & brown chert 95-5, marcasite 2/10	
130	140	Brown dolomite-gray & brown chert 96-4, marcasite 3, trace blende	
140	150	Gray-brown dolomite-gray & tan chert 95-5, marcasite 4	
150	160	Brown dolomite-gray & tan chert 92-8, marcasite 4	
160	165	Brown dolomite-gray chert 97-3, trace calcite, marcasite 10	
165	170	Gray dolomite-brown dolomite (20-80) few specks brown chert, gray clay 3, marcasite 2	GRAY 169
170	172½	Gray dolomite-trace calcite, marcasite 2	
172½	175	Gray dolomite-marcasite 1	
175	177½	Gray/brown dolomite-marcasite 5	
177½	180	Dark gray speckled dolomite-gray dolomite (20-80)-gray/blue clay 7 marcasite 1	BLUE 179½
180	182½	Lost cuttings	
182½	185	Brown dolomitic limestone-dark gray speckled dolomite (20-80) gray/blue clay 15, marcasite 2, blende 1/10	OIL 184½
185	187½	Brown dolomitic limestone-gray clay 5, marcasite 20,	BLENDE 9%
187½	190	Brown dolomitic limestone-marcasite 25, blende 5%, some blue ravellings	
190	192½	Brown dolomitic limestone, marcasite 40, blende 8%	
192½	195	Brown dolomitic limestone-gray clay (60-40) marcasite 30, blende 4%	CLAY 194
195	197½	Brown dolomitic limestone-gray clay (40-60) trace marcasite	GLASS 196½
197½	200	Brown dolomitic limestone-gray clay 15, marcasite 9, blende 1%	
200	202½	Gray dolomitic limestone-gray clay 10, marcasite 6, blende 1½%	McGREGOR 200
202½	205	Gray dolomitic limestone-marcasite 7, blende 5/10	

Driller's Remarks: Ground was ribby from 110-160, soft from 190-200, loose 182½ to 187½. Most of the cuttings were lost from 110-115, 120-125, 130-165, 175-177½, & 180-182½

Continued

Lafayette County
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~~Serial No. 105~~
Hole No. 16 (Continued)
Collar Elevation: 954.06'
Depth of Hole: 205.6'
Location: Francis M. Calvert

Date completed: 4/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	ZnS	Assays FeS_2	PbS
177½	180	0.60	8.00	
180	182½	cuttings lost		
182½	185	0.25	15.10	nil
185	187½	2.35	19.60	nil
187½	190	9.30	21.90	nil
190	192½	4.05	28.20	nil
192½	195	2.25	26.00	nil
195	197½	0.95	18.90	nil
197½	200	1.10	20.60	nil
200	202½	0.70	26.60	nil

Assay received by telephone.

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Serial No. 106
Hole No. 17
Collar Elevation: 947.31'
Depth of Hole: 197.7 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay & soil
5	10	Buff clay
10	15	Buff clay & buff dolomite
15	25	Buff dolomite, trace limonite, medium coarse cuttings
25	30	Buff dolomite
30	35	Buff-brown dolomite
35	45	Buff & gray-brown dolomite, few specks marcasite
45	55	Buff & brown dolomite, marcasite 1/10
55	60	Brown & buff dolomite, trace gray-white clay, marcasite 1/10
60	65	Brown dolomite, brown & buff dolomite (50-50), gray chert 99-1, marcasite 1/10 DRAB - 62½
65	70	Brown dolomite, gray & tan chert 96-4, marcasite 1
70	80	Brown dolomite, gray chert 92-8, marcasite 4
80	90	Brown dolomite, gray chert 91-9, marcasite 2
90	100	Gray-brown dolomite, tan chert 92-8, marcasite 3
100	110	Gray-brown dolomite, gray tan & brown chert 96-4, marcasite 1 5/10, specks blende
110	120	Light brown dolomite, gray & tan chert 99-1, marcasite 2 5/10, blende 1/10
120	130	Light brown dolomite, gray & tan chert 96-4, marcasite 2, blende 2/10
130	135	Light brown & brown dolomite, gray chert 99-1, calcite 1/10, marcasite 6, blende 2/10
135	140	Light brown & brown dolomite, gray & tan chert 98-2, marcasite 5, blende 5/10 (small recovery)

Continued

Lafayette County
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~~Serial No. 106~~
Hole No. 17 (Continued)
Collar Elevation: 947.31'
Depth of Hole: 197.7 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
140	145	Light brown dolomite, gray chert 99-1, trace calcite, marcasite 15, blende 7 (small recovery)
145	147½	Brown dolomite, gray & tan chert 96-4, trace calcite, marcasite 12, blende 4
147½	150	Brown dolomite, gray chert 94-6, marcasite 8, blende 1 5/10
150	155	Brown dolomite, gray chert 93-7, marcasite 8, blende 1
155	160	Brown dolomite, gray chert 95-5, marcasite 12, blende 1 5/10
160	162½	Gray dolomite, brown dolomite (90-10), trace calcite, marcasite 11, blende 1 5/10 GRAY - 160.3
162½	165	Gray dolomite, marcasite 5, blende 1
165	167½	Gray dolomite, trace calcite, marcasite 3, blende 3/10
167½	170	Gray-brown dolomite, marcasite 3, blende 5/10
170	172½	Gray-brown dolomite, marcasite 1 5/10, blende 2/10
172½	175	Gray-brown dolomite, marcasite 1, blende 2/10
175	177½	Dark gray-speckled dolomite, gray dolomite (10-90), marcasite 5, blende 1 BLUE - 177.3
177½	180	Dark gray speckled dolomite, gray-blue clay 5, marcasite 7, blende 2
180	182½	Dark gray speckled dolomite, trace gray-blue clay, marcasite 10, blende 6
182½	185	Dark gray speckled dolomite, marcasite 10, blende 5
185	187½	Dark gray speckled dolomite, marcasite 12, blende 2
187½	190	Dark brown dolomite limestone, tan limestone (fossiliferous) dark gray dolomitic limestone (80-20), marcasite 7, blende 7/10, specks galena OIL - 188
190	192½	Dark brown dolomitic limestone, tan limestone (fossiliferous), dark brown shale 15, marcasite 5, blende 7/10, specks galena, coarse cuttings
192½	195	Dark brown dolomitic limestone, gray clay, gray dolomitic limestone (40-40-20), brown shale 5, marcasite 4, blende 2/10, specks galena CLAY - 192½ GLASS - 193½ McGREGOR - 194½
195	197½	Gray dolomitic limestone (glassy & oil ravellings), marcasite 2, blende 3/10, specks galena

Driller's remarks: Soft ground 135-140, 160-190. Lost most of cuttings from 140-185. Strong water 135-140. Clay bed from 192½ - 194.

Continued

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~~Serial No. 106~~
Hole No. 17 (Continued)
Collar Elevation: 947.31'
Depth of Hole: 197.7' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	ZnS	Assays FeS_2	PbS
135	140	0.75	5.80	nil.
140	145	19.25	18.70	nil.
145	147½	5.50	18.30	nil.
147½	150	1.90	16.60	nil.
150	155	2.25	14.00	nil.
155	160	3.00	16.80	nil.
160	162½	1.35	11.40	nil.
162½	165	0.80	5.40	nil.
165	167½	0.55	4.70	nil.
172	175	0.75	4.50	nil.
175	177½	2.70	11.20	nil.
177½	180	1.70	21.70	nil.
180	182½	10.35	24.30	nil.
182½	185	11.55	34.60	nil.
185	187½	3.30	16.10	nil.
187½	190	1.45	16.80	nil.
190	192½	1.45	9.70	nil.
192½	195	1.25	14.20	nil.
195	197½	0.85	10.10	nil.

~~Serial No. 107~~
Hole No. 18
Collar Elevation: 933.07'
Depth of Hole: 180.7' (Measurement by steel tape)
Location: Francis M. Calvert

Lafayette County
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Date completed: 5/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown clay & Black soil	
5	10	Buff dolomite, trace buff-white clay, limonite 5/10, coarse cuttings	
10	20	Buff dolomite, trace buff-white clay, limonite 2/10, coarse cuttings	
20	25	Buff dolomite, limonite 1/10, coarse cuttings	
25	30	Buff dolomite, & brown dolomite, brown clay 10, limonite 7/10, marcasite 1/10	
30	35	Buff & brown dolomite, limonite 5/10, marcasite 5/10	
35	40	Brown & buff dolomite, limonite 2/10, marcasite 3	
40	45	Brown & buff dolomite, few specks gray chert, limonite 1/10, marcasite 4	DRAB - 45
45	50	Brown dolomite, gray chert 99-1, limonite 1/10, marcasite 3	
50	55	Light brown dolomite, gray chert 96-4, limonite 1/10, marcasite 2/10	
55	60	Light brown dolomite, gray chert 98-2, limonite 1/10, marcasite 1 5/10	
60	70	Brown dolomite, brown-buff shale 5, gray chert 95-5, limonite 1/10, marcasite 5/10	
70	80	Brown & gray-brown dolomite, gray chert 95-5, marcasite 2/10	
80	90	Gray-brown dolomite, gray chert 96-4, marcasite 1 5/10	
90	100	Gray-brown & brown dolomite, gray chert 99-1, marcasite 1 5/10	
100	110	Gray-brown dolomite, gray chert 98-2, marcasite 1	
110	120	Gray-brown & brown dolomite, gray chert 96-4, marcasite 7/10	
120	130	Brown dolomite, gray chert 93-7, marcasite 5/10	
130	140	Brown dolomite, gray chert 98-2, marcasite 3/10	
140	145	Gray dolomite, brown dolomite (20-80), specks gray chert, trace gray clay, marcasite 1/10	GRAY - 144
145	147½	Lost cuttings	
147½	150	Gray dolomite, marcasite 4 (small recovery)	
150	152½	Gray dolomite, marcasite 3/10	
152½	155	Gray dolomite, marcasite 5 (small recovery)	
155	157½	Gray dolomite, marcasite 3 (½ recovery)	
157½	160	Dark gray speckled dolomite, gray dolomite (80-20), gray clay 15, marcasite 4, trace blende	BLUE - 158
160	162½	Dark gray speckled dolomite, gray clay 2, marcasite 1	
162½	165	Dark gray speckled dolomite, marcasite 1	
165	167½	Brown dolomitic limestone, dark gray speckled dolomite 60-40, gray-white clay 3, marcasite 1 5/10, blende 1/10	OIL - 166
167½	170	Tan limestone, brown dolomitic limestone, gray-white clay 5, marcasite 1, trace blende (some blue ravellings)	
170	172½	Tan limestone, dark brown shale 5, blue clay 5, trace calcite, marcasite 1	CLAY - 172.3
172½	175	Dark brown dolomitic limestone, blue clay 20-80, marcasite 1/10	GLASS - 174½
175	177½	Dark brown dolomite, marcasite 2/10	
177½	180	Gray dolomitic limestone, marcasite 1/10	McGREGOR - 177½

Lafayette County
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~~Serial No. 108~~
Hole No. 19
Collar Elevation: 933.74'
Depth of Hole: 185.2 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/12/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	7	Black soil
7	10	Buff clay
10	15	Buff dolomite, trace marcasite, coarse cuttings
15	20	Buff dolomite, trace limonite, trace marcasite, coarse cuttings
20	25	Buff & pale buff dolomite, trace limonite, trace galena, medium coarse cuttings
25	30	Buff & pale buff dolomite, trace limonite, trace marcasite, trace galena, medium coarse cuttings
30	35	Pale buff & buff dolomite, trace marcasite, trace galena
35	40	Pale buff dolomite, limonite 1/10, galena 1/10
40	45	Pale buff dolomite, trace calcite, limonite 1/10, galena 1/10
45	50	Pale buff & brown dolomite, limonite 1/10, trace galena
50	55	Brown dolomite, gray & tan chert 97-3, limonite 1/10, marcasite 1/10, galena 1/10 — DRAB - 50
55	60	Brown dolomite, gray & tan chert 96-4, trace limonite, marcasite 1, few specks galena
60	70	Brown dolomite, gray & tan chert 94-6, marcasite 1, few specks galena
70	80	Brown dolomite, gray & tan chert 93-7, marcasite 5/10, few specks galena
80	90	Pale brown dolomite, tan & gray chert 97-3, marcasite 5/10
90	100	Pale brown dolomite, gray chert 98-2, trace calcite, marcasite 8/10
100	110	Brown dolomite, gray & tan chert 97-3, marcasite 2/10
110	120	Brown dolomite, gray & tan chert 95-5, marcasite 2/10 115-120 Small recovery
120	125	Gray-brown dolomite, gray chert 98-2, marcasite 4/10, specks blende, small recovery
125	135	Light brown & brown dolomite, gray & tan chert 95-5, marcasite 3/10, specks blende
135	145	Brown dolomite, gray & tan chert 95-5, marcasite 1/10
145	150	Brown dolomite, gray chert 99-1, marcasite 1
150	152½	Gray dolomite, brown dolomite (80-20), trace calcite, marcasite 2/10 — GRAY - 150½
152½	155	Gray dolomite, trace brown clay, marcasite 2/10
155	157½	Gray dolomite, trace calcite, marcasite 6/10 (small recovery)
157½	160	Gray dolomite, marcasite 1 5/10 (small recovery)
160	162½	Gray dolomite, marcasite 1 5/10 — BLUE - 163½
162½	165	Dark gray speckled dolomite, gray dolomite 60-40, trace gray clay, marcasite 1, few specks blende
165	167½	Dark gray speckled dolomite, trace calcite, marcasite 2/10, few specks blende
167½	170	Brown & tan limestone (fossiliferous), dark gray speckled dolomite (20-80), gray clay 10, marcasite 3/10, few specks blende — OIL - 169½
170	172½	Brown & tan fossiliferous limestone, marcasite 1/10, few specks blende
172½	175	Brown & tan fossiliferous limestone, marcasite 4/10, trace blende
175	177½	Brown & tan fossiliferous limestone, marcasite 2/10, few specks blende — CLAY - 177½
177½	180	Gray-blue clay, dark brown dolomitic limestone (80-20), marcasite 1/10 — GLASS - 179
180	182½	Dark brown dolomitic limestone, gray-blue clay 30 (ravellings), trace marcasite
182½	185	Gray dolomitic limestone, dark brown dolomitic limestone (40-60), gray clay 15, trace marcasite — McGREGOR - 184

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~~Serial No. 109~~
Hole No. 20
Collar Elevation: 955.38'
Depth of Hole: 201.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/15/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Buff clay
8	15	Buff dolomite, buff clay 5 (ravelling), trace limonite, specks marcasite, coarse cuttings
15	25	Buff dolomite, trace limonite, coarse cuttings
25	40	Buff-brown dolomite, trace limonite, some coarse cuttings
40	45	Buff-brown & brown dolomite, specks marcasite, medium coarse cuttings
45	50	Buff-brown, brown & gray dolomite, specks marcasite, specks limonite
50	55	Buff-brown, brown & gray dolomite, trace marcasite
55	60	Buff-brown & brown dolomite, trace marcasite
60	65	Brown dolomite, marcasite 3/10
65	70	Brown dolomite, gray & brown chert 97-3, dark brown shale 2 marcasite 2/10 DRAB - 65
70	75	Brown dolomite, gray & brown chert 93-7, marcasite 7/10, specks blende
75	85	Brown dolomite, gray & brown chert 91-9, marcasite 3, specks blende, specks galena
85	95	Brown dolomite, gray & brown chert 90-10, marcasite 3, blende 1/10, trace galena
95	100	Brown dolomite, gray dolomite, gray clay 1, marcasite 3, blende 3/10
100	105	Gray-brown dolomite, gray & tan chert 96-4, marcasite 3, blende 3/10, specks galena
105	110	Brown dolomite, gray & tan chert 98-2, marcasite 3, blende 1/10
110	115	Brown dolomite, gray chert 96-4, marcasite 6, blende 2/10
115	120	Brown dolomite, gray chert 97-3, marcasite 8, blende 2/10 (small recovery)
120	125	Brown dolomite, tan & gray chert 95-5, marcasite 5/10, blende 1/10
125	130	Brown dolomite, tan & gray chert 98-2, marcasite 5/10, blende 1/10
130	135	Brown dolomite, tan & gray chert 97-3, marcasite 6, blende 1/10
135	140	Brown dolomite, tan & gray chert 97-3, marcasite 1, blende 1/10
140	145	Brown dolomite, tan & gray chert 96-4, marcasite 5, blende 1
145	150	Brown dolomite, tan & gray chert 95-5, marcasite 6, blende 1 5/10
150	155	Brown dolomite, tan & gray chert 97-3, marcasite 9, blende 3/ 5/10 (Small recovery)
155	157½	Brown dolomite, tan & gray chert 96-4, marcasite 9, blende 3 (small recovery)
157½	160	Brown dolomite, gray & tan chert 94-6, marcasite 12, blende 3
160	162½	Brown dolomite, gray chert 98-2, marcasite 8, blende 3/10
162½	165	Brown dolomite, gray & brown chert 99-1, marcasite 7, blende 1
165	167½	Gray-brown dolomite, gray & tan chert 99-1, marcasite 6, blende 5/10
167½	170	Gray dolomite, gray-brown dolomite, (40-60), marcasite 2, blende 1/10 GRAY - 169
170	172½	Gray dolomite, gray-white clay 1, marcasite 3, blende 2/10
172½	175	Gray dolomite, gray clay 10, marcasite 3, trace blende
175	180	Gray dolomite, trace gray clay, marcasite 3, blende 1/10 (some gray chert ravelling)
180	182½	Gray dolomite, trace gray clay, marcasite 6, blende 2/10
182½	185	Dark gray speckled dolomite, gray dolomite (80-20), gray clay 5, marcasite 3, blende 1/10 BLUE - 183
185	187½	Dark gray speckled dolomite, gray-blue clay 40, marcasite 1, trace blende

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 109~~
Hole No. 20 (Continued)
Collar Elevation: 955.38'
Depth of Hole: 201.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/15/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology	
187½	190	Brown dolomite limestone, dark gray speckled dolomite (40-60) gray-blue clay 5, marcasite 1, specks blende, specks galena	OIL - 188½
190	192½	Brown dolomitic limestone, tan limestone, gray-blue clay 10, marcasite 1, blende 1/10	CLAY - 192.3
192½	195	Dark brown dolomitic limestone, gray-blue clay (20-80), trace marcasite, trace blende	GLASS - 194½
195	197½	Gray dolomitic limestone, dark brown dolomitic limestone (40-60), dark brown shale 5, marcasite 1/10, trace blende	McGREGOR - 196½
197½	200	Gray dolomitic limestone, dark brown shale (ravelling), marcasite 1/10	

Driller's remarks: Fracture at 119. Fracture zone 130-140 lost most of cuttings, fracture zone 145-150 lost most of cuttings. Lost most of cuttings 140-145, 150-165. Soft ground from 182½-195

Depth From	Depth To	Assays ZnS	FeS₂	PbS
125	130	0.60	2.40	nil.
130	135	1.10	6.70	nil.
135	140	0.65	3.90	nil.
140	145	3.20	7.30	nil.
145	150	1.30	8.20	nil.
150	155	3.85	15.30	nil.
155	157½	4.75	11.80	nil.
157½	160	3.80	14.40	nil.
160	162½	1.15	8.00	nil.
162½	165	1.95	7.50	nil.
165	167½	0.85	3.90	nil.
167½	170	0.55	3.70	nil.
170	172½	0.90	9.70	nil.
172½	175	0.55	6.40	nil.
175	177½	0.50	5.00	nil.
177½	180	0.50	5.40	nil.
180	182½	0.70	4.10	nil.
182½	185	0.85	8.00	nil.

~~Serial No. 110~~
Hole No. 21
Collar Elevation: 949.53'
Depth of Hole: 197'
Location: Francis M. Calvert

Lafayette County
~~See. ef. 151~~

Date completed: 5/19/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Buff clay
10	15	Buff dolomite, brown-red clay 95-5, few specks red & buff residual chert
15	25	Coarse cuttings: Dark buff dolomite, limonite 2/10
25	35	Rather coarse cuttings: Dark buff dolomite, limonite 2/10 few specks marcasite
35	40	Rather coarse cuttings: Buff & Brown-buff dolomite, limonite 1/10, few specks marcasite
40	50	Pale buffish-brown dolomite, marcasite 1/10
50	55	Pale brown dolomite, marcasite 3/10, few specks calcite
55	60	Pale brown dolomite, marcasite 8/10, few specks calcite
60	65	Brown dolomite, marcasite-speckled chert 85-15, marcasite 2, trace blende & galena DRAB - 60
65	70	Brown dolomite, marcasite-speckled chert 88-12, trace dark brown shale, marcasite 5, blende 2/10, trace galena
70	75	Brown dolomite, marcasite-speckled chert & brown chert 92-8 marcasite 6, blende 5/10, trace galena
75	80	Brown dolomite, marcasite-speckled chert 90-10, chocolate brown shale, marcasite 2, blende 2/10, trace galena
80	85	Brown dolomite, gray-brown chert 92-8, trace chocolate brown shale, marcasite 4, blende 3/10, trace galena
85	90	Brown dolomite, gray-brown chert 95-5, trace chocolate brown shale, marcasite 3, blende 2/10, trace galena
90	95	Pale brown dolomite, gray-brown chert 99-1, marcasite 1, blende 1/10, trace galena
95	105	Pale brown dolomite, light gray chert 93-7, marcasite 3, blende 4/10, trace galena
105	110	Brown dolomite, gray chert 93-7, trace brown chert, marcasite 4, blende ½, thin trace galena
110	115	Pale brown dolomite, gray chert 99-1, marcasite 6, blende 1
115	120	Brown dolomite, gray chert 92-8, marcasite 5, blende 2
120	125	Brown dolomite, gray chert 99-1, marcasite 12, blende 5
125	130	Brown dolomite, gray-brown chert 98-2, marcasite 5, blende 1
130	135	Brown dolomite, gray-brown chert 96-4, marcasite 4, blende 6/10
135	140	Brown dolomite, trace gray chert, marcasite 4, blende ½
140	145	Small recovery: Brown dolomite, brown, tan & marcasite-speckled chert 90-10, marcasite 2, blende 1
145	147½	Brown dolomite, brown & marcasite-speckled chert 88-12, marcasite 1 blende ½
147½	150	Brown dolomite, light brown chert 85-15, marcasite 7/10, blende 6/10
150	155	Brown dolomite, brown chert 96-4, marcasite ½, blende 1/10
155	160	Dark brown dolomite, few specks chert, marcasite ½, trace blende GRAY - 160
160	165	Gray dolomite, few specks brown dolomite, trace gray clay, marcasite 5, blende 2
165	167½	Gray dolomite, marcasite 1, blende 4/10
167½	170	Brown-gray dolomite, marcasite 1, blende 1/10
170	172½	Brown-gray dolomite, marcasite 7/10, blende 2/10
172½	175	Brown-gray dolomite, gray dark-speckled dolomite 90-10, marcasite 2, blende 8/10 BLUE - 174.8

Continued

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Lafayette County
~~Sec. [illegible]. 151~~

~~Serial No. 110~~
Hole No. 21 (Continued)
Collar Elevation: 949.53'
Depth of Hole: 197'
Location: Francis M. Calvert

Date completed: 5/19/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
175	177½	Gray dark-speckled dolomite, trace reddish-brown clay, blende 18, marcasite 8
177½	180	Gray dark-speckled dolomite, blende 30, marcasite 20
180	182½	Gray dark-speckled dolomite, blende 30, marcasite 25
182½	185	Gray dark-speckled dolomite, brown dolomitic limestone 95-5, few fossils, gray clay 1, marcasite 30, blende 15
185	187½	Brown dolomitic limestone, numerous fossils, marcasite 35, blende 10 — OILROCK - 184.9
187½	190	Green clay, few fossils, marcasite 15, blende 8
190	192½	Gray clay (bentonite), brown dolomitic limestone 60-40, marcasite 6, blende 4 — CLAYBED - 188
192½	195	Few specks gray dolomitic limestone, marcasite ravellings from "Blue" horizon, 60, Blende ravellings from "Blue" 35, few specks chocolate brown shale — GLASS - 191.5
195	197	Gray dolomitic limestone, some ravellings from "Glassrock" horizon, marcasite ravellings 15, blende ravellings 12, caving badly at the bottom — McGREGOR - 193

Total depth measured - couldn't get tape to the bottom. I am satisfied it measures 197'. H.W. Davis

Driller's remarks:

Lost most of cuttings	100 - 110
" " " "	125 - 135
" " " "	145 - 165
Soft ground	172½-192½
Caving in	192½- 197

Water table: 25'

Depth From	Depth To	Assays ZnS	FeS	PbS
110	115	0.55	6.70	nil.
115	120	0.85	11.40	nil.
120	125	4.55	17.20	nil.
125	130	1.05	12.70	nil.
140	145	3.90	10.30	nil.
160	165	1.90	12.00	nil.
172½	175	1.35	22.40	nil.
175	177½	28.65	21.50	nil.
177½	180	32.35	37.20	nil.
180	182½	21.40	43.40	nil.
182½	185	12.55	55.90	nil.
185	187½	10.15	34.60	nil.
187½	190	10.90	44.10	nil.
190	192½	3.10	11.80	nil.
192½	195	31.30	46.80	nil.
195	197	17.55	21.90	nil.

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Lafayette County
~~Sec. [illegible]. 151~~

~~Serial No. 111~~
Hole No. 22
Collar Elevation: 940.73'
Depth of Hole: 188' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown clay
10	20	Buff dolomite, trace clay (rather coarse cuttings)
20	30	Brown-buff dolomite, trace clay, few specks marcasite, a speck blende (coarse cuttings)
30	40	Buffish-brown dolomite, buff dolomite 80-20, few specks marcasite, a speck blende
40	45	Brown dolomite, buff dolomite 80-20, a speck marcasite
45	50	Brown dolomite, trace marcasite
50	55	Brown dolomite, trace calcite, marcasite 2
55	60	Brown dolomite, tan & gray-brown chert 94-6, some clay sloughing, marcasite 3/10 DRAB - 57½
60	70	Brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 2, blende 2/10
70	75	Brown dolomite, dark gray marcasite-speckled chert 92-8, marcasite 2, blende 2/10
75	80	Brown dolomite, gray chert 97-3, marcasite 2, blende 3/10
80	85	Brown dolomite, gray chert 95-5, buff dolomitic ravellings 5, marcasite 1, blende 1/10
85	90	Brown-gray dolomite, gray & white chert 93-7, marcasite 1½, blende 6/10, trace galena
90	95	Gray dolomite, gray chert 96-4, marcasite 2, blende 3/10, trace galena
95	100	Brown-gray dolomite, gray chert 98-2, marcasite 8, blende 3, a speck galena
100	105	Brown-gray dolomite, gray chert 75-25, marcasite 10, blende 2, a speck galena
105	110	Gray dolomite, gray chert 99-1, chocolate brown shale 1, marcasite 7, blende 1
110	115	Brown dolomite, light tan chert 95-5, marcasite 5, blende ½
115	120	Brown dolomite, light tan chert 93-7, marcasite 4, blende ½
120	125	Brown dolomite, gray chert 80-20, marcasite 4, blende 4/10, few specks galena
125	130	Brown dolomite, gray chert 99-1, marcasite 3, blende 4/10, thin trace galena
130	135	Brown dolomite, gray chert 91-9, marcasite 5, trace blende, specks galena
135	140	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 10, few specks blende
140	145	Brown dolomite, marcasite-speckled chert 60-40, marcasite 25 blende 1
145	150	Brown dolomite, marcasite-speckled chert & gray chert 97-3, marcasite 4, blende 2/10 GRAY - 151
150	155	Gray dolomite, brown dolomite 80-20, marcasite 8, blende 6
155	157½	Gray dolomite, marcasite 12, blende 2
157½	160	Gray dolomite, marcasite 3, blende ½
160	162½	Brown-gray dolomite, marcasite 6, blende ½
162½	165	Brown-gray dolomite, marcasite 2, blende 2/10
165	167½	Brown-gray dolomite, gray dark-speckled dolomite & gray clay 80-20, marcasite 2, blende 2 BLUE - 167
167½	170	Gray dark-speckled dolomite, marcasite 2, blende 1
170	172½	Gray dark-speckled dolomite, gray clay 2, marcasite 2, blende 7/10

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 111~~
Hole No. 22 (Continued)
Collar Elevation: 940.73'
Depth of Hole: 188' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
172½	175	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 3, blende 6/10	OIL - 173
175	177½	Tan limestone, dark brown shale 95-5, marcasite 2, blende ½, specks galena	
177½	180	Light brown fossiliferous limestone, dark brown shale 99-1, marcasite 2, blende 4/10	CLAY - 180.3
180	182½	Green clay, brown limestone 90-10, marcasite ½	
182½	185	Gray dolomitic limestone, dark brown dolomite 70-30, marcasite ½, blende 2/10	GLASS - 182.5
185	188	Gray dolomitic limestone, marcasite 6/10, blende 2/10	McGREGOR - 183.2

Driller's Remarks: Ribby ground 110-140
Lost most of cuttings from 140-155
Soft ground 170-175
Claybed 181-183
6½" hole

Water table: 17'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
95	100	2.50	9.84	0.17
100	105	1.60	10.05	0.10
105	110	0.50	11.34	0.17
110	115	0.25	5.13	0.10
140	145	3.80	27.80	0.17
145	150	0.15	5.99	0.10
150	155	15.00	11.77	Trace
155	157½	2.35	13.91	Trace
157½	160	0.67	5.35	Trace
165	167½	4.37	13.69	Trace
167½	170	2.20	4.67	Trace
170	172½	0.80	7.70	Trace

Lafayette County
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~~Serial No. 112~~
Hole No. 23
Collar Elevation: 944.78'
Depth of Hole: 185.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Soil	
6	10	Coarse cuttings: Buff dolomite, few specks marcasite	
10	20	Coarse cuttings: Buff dolomite	
20	25	Buff dolomite	
25	35	Brown-buff dolomite	
35	40	Brown-buff dolomite, trace brown clay	
40	45	Brown dolomite, few specksmarcasite	
45	55	Brown dolomite, little buff dolomitic ravellings, few specks marcasite	
55	60	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 7/10	DRAB - 57½
60	65	Brown dolomite, marcasite-speckled chert 90-10, marcasite 1, trace blende	
65	70	Brown dolomite, gray-brown chert 96-4, marcasite 1½, trace blende	
70	75	Brown dolomite, gray-brown chert 95-5, marcasite 1½, few specks blende	
75	85	Brown dolomite, gray chert 99-1, marcasite 3, specks blende	
85	95	Pale brown dolomite, smoky white chert 80-20, marcasite 3, blende 4/10, specks galena	
95	100	Brown dolomite, marcasite-speckled chert 95-5, marcasite 4, blende 1	
100	105	Brown dolomite, gray & marcasite-speckled chert 94-6, marcasite 8, blende 7/10	
105	110	Brown dolomite, gray-brown chert 97-3, marcasite 4, blende 3/10	
110	115	Brown dolomite, gray-brown chert 94-6, marcasite 3, blende 2/10	
115	120	Brown dolomite, tan & gray chert 92-8, marcasite 5, blende 1/10	
120	130	Brown dolomite, tan & gray chert 95-5, marcasite 1, trace blende	
130	135	Brown dolomite, gray-brown chert 97-3, marcasite 1, blende 1/10	
135	140	Brown dolomite, gray-brown chert 92-8, marcasite 6, blende 1½	
140	145	Brown dolomite, gray-brown chert 80-20, marcasite 5, blende 1	
145	150	Brown dolomite, gray-brown chert 95-5, marcasite 3, blende 8/10	
150	155	Gray dolomite, brown dolomite 90-10, marcasite 3, blende 2	GRAY - 150.5
155	157½	No recovery	
157½	160	Small recovery: Gray marcasite-speckled dolomite, marcasite 10, blende 3/10	
160	162½	Small recovery: Brown-gray marcasite-speckled dolomite, marcasite 17, blende ½	
162½	165	Small recovery: Brown-gray marcasite-speckled dolomite, marcasite 12, blende 1	
165	167½	No recovery	BLUE
167½	170	Fair recovery: Gray dark-speckled dolomite, marcasite 10, blende 2	
170	172½	Gray dark-speckled dolomite & brown-gray dolomite, marcasite 9, blende 4/10	
172½	175	Gray dark-speckled dolomite & brown-gray dolomite, brown fossiliferous dolomitic limestone 80-20, trace gray clay, marcasite 8, blende 3/10	OIL - 174½
175	177½	Brown fossiliferous dolomitic limestone, dark brown shale 60-40, marcasite 6, blende 4/10	
177½	180	Green clay, brown fossiliferous dolomitic limestone 90-10, impossible to separate mineral	CLAY - 177.7
180	182½	Brown dolomite (coarse cuttings), bentonite 80-20, marcasite 1, blende 1/10	GLASS - 180.5
182½	185	Gray dolomitic limestone, brown dolomite 90-10, trace chocolate brown shale, marcasite 4, blende ½	McGREGOR - 182.7

Water table: 21'

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Continued

Lafa[illegible]te County
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~~Serial No. 112~~
Hole No. 23 (Continued)
Collar Elevation: 944.78'
Depth of Hole: 185.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
95	100	0.10	6.42	Trace
100	105	0.25	6.63	Trace
135	140	2.50	6.20	Trace
140	145	1.32	6.63	Trace
145	150	16.60	4.49	Trace
150	155	3.00	5.35	Trace
157½	160	0.70	12.84	Trace
160	162½	1.22	17.33	Trace
162½	165	3.25	18.19	Trace
167½	170	1.45	9.41	Trace
170	172½	0.57	12.19	Trace

Lafay[illegible]e County
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~~Serial No. 114~~
Hole No. 24
Cellar Elevation: 937.92'
Depth of Hole: 177.5 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	4	Soil
4	10	Coarse cuttings: Buff dolomite, few specks limonite
10	20	Coarse cuttings: Buff dolomite, trace limonite
20	25	Coarse cuttings: Buff & dark buff dolomite, trace limonite
25	30	Buff dolomite, dark ochre clay 95-5, limonite & marcasite 2
30	35	Brown-gray dolomite, buff dolomite 95-5, marcasite 4
35	40	Brown-gray dolomite, trace buff dolomite, marcasite 3, trace limonite DRAB - 47½
40	45	Brown & gray-brown dolomite, trace buff dolomite, marcasite 3, trace limonite
45	50	Brown-gray dolomite, light gray & tan chert 98-2, marcasite 2½, trace limonite
50	55	Brown-gray dolomite, light gray chert 94-6, marcasite 10, galena 7/10, blende 2/10
55	60	Brown-gray dolomite & brown dolomite, gray marcasite-speckled chert 88-12, dark ochre clay 3, marcasite 10, blende ½, few specks galena
60	65	Brown dolomite, gray-brown chert & gray marcasite-speckled chert 80-20, marcasite 8, trace blende, few specks galena
65	70	Gray-brown dolomite, gray-brown & marcasite-speckled chert 85-15, marcasite 9, blende 2/10, a speck galena
70	75	Brown-gray dolomite, marcasite-speckled chert 90-10, marcasite 8, blende 1/10
75	80	Light gray dolomite, white chert 60-40, marcasite 4, blende 2/10, specks galena
80	85	Light gray dolomite, white chert 93-7, marcasite 2, trace blende
85	90	Brown-gray dolomite, gray & white chert 95-5, marcasite 5, trace blende
90	95	Light brown-gray dolomite, gray chert 93-7, marcasite 5, trace blende
95	100	Brown dolomite, gray & marcasite-speckled chert 91-9, marcasite 4, specks blende
100	110	Light brown dolomite, gray & marcasite-speckled chert 96-4, marcasite 3, specks blende
110	115	Gray-brown dolomite, gray chert 92-8, marcasite 7
115	120	Brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 5
120	125	Brown dolomite, gray & marcasite-speckled chert 88-12, marcasite 2½
125	130	Brown dolomite, gray & brown chert 90-10, marcasite 1
130	135	Brown dolomite, few specks gray chert, few specks gray dolomite, marcasite ½ GRAY - 135
135	140	Gray dolomite, trace gray clay, marcasite 2, a speck blende
140	142½	Gray dolomite, marcasite 6
142½	145	Gray dolomite, marcasite 4
145	147½	Gray dolomite, marcasite 3, blende 1/10
147½	150	Gray dark-speckled dolomite, trace gray clay, marcasite 2, trace blende BLUE - 147½
150	152½	Gray dark-speckled dolomite, marcasite 2
152½	155	Gray dark-speckled dolomite, marcasite 1
155	157½	Brown dolomitic limestone, marcasite 6/10 OILROCK - 155
157½	160	Brown dolomitic limestone, dark brown shale 99-1, few fossils, marcasite 7/10, specks blende

Continued

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 114~~
Hole No. 24 (Continued)
Cellar Elevation: 937.92'
Depth of Hole: 177.5 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 5/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
160	162½	Brown fossiliferous dolomitic limestone, marcasite ½
162½	165	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 80-20, marcasite 4/10
165	167½	Brown fossiliferous dolomitic limestone & gray dark speckled fossiliferous dolomitic limestone, green clay 80-20, marcasite 2/10 — CLAY - 167
167½	170	Light brown fine grained dolomite, gray dark-fossiliferous limestone 90-10, marcasite 2/10
170	172½	Light brown fine grained dolomite, marcasite ½, few specks blende — GLASS - 168
172½	175	Light brown fine grained dolomite, gray fine grained dolomite 40-60, marcasite 3/10, specks blende
175	177½	Light gray fine grained dolomite, trace bentonite, marcasite 4/10 — McGREGOR - 173.5

Depth From	Depth To	Assays ZnS	FeS_2	PbS
50	55	0.10	13.00	1.02
55	60	0.05	13.48	0.12
60	65	0.05	11.98	0.13
65	70	0.05	10.05	0.12
70	75	0.05	11.34	0.12

Lafay[illegible]te County
~~Sec. Ref. 151~~

~~Serial No. 115~~
Hole No. 25
Collar Elevation: 947.51'
Depth of Hole: 195.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/3/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown clay	
5	10	Brown-buff clay & ochre clay	
10	15	Coarse cuttings: Buff dolomite, trace brown-buff clay, few specks marcasite	
15	25	Coarse cuttings: Buff dolomite	
25	50	Buff dolomite	
50	60	Dark buff dolomite, brown-gray dolomite 65-35	
60	65	Pale brown dolomite, light gray chert 94-6, few specks brown chert, trace marcasite	DRAB - 62½
65	70	Brown dolomite, gray & tan chert 92-8, marcasite 2/10	
70	85	Brown dolomite, gray & brown chert 93-7, marcasite 8/10	
85	100	Brown dolomite, light gray chert 95-5, marcasite 3/10	
100	115	Pale brown dolomite, light gray chert 99-1, marcasite 4/10	
115	130	Brown dolomite, gray marcasite-speckled shale, light gray chert 90-6-4, marcasite 8	
130	135	Brown dolomite, light gray chert 99-1, marcasite 18	
135	140	Small recovery: Brown dolomite, trace gray chert, trace dark gray clay, marcasite 9	
140	145	Brown dolomite, tan & gray chert 94-6, marcasite 20	
145	150	Brown dolomite, tan & brown chert 92-8, marcasite 10	
150	155	Brown dolomite, tan chert 97-3, marcasite 7	
155	160	Brown dolomite, few specks tan chert, marcasite 7	
160	165	Gray dolomite, brown dolomite 90-10, marcasite 4	GRAY - 160.5
165	170	Gray dolomite, marcasite 2	
170	172½	Brown-gray dolomite, marcasite 2	
172½	175	Brown-gray dolomite, marcasite 1	BLUE - 175.0
175	177½	Dark gray dark-speckled dolomite, gray clay 2, marcasite 6/10	
177½	180	Brown dolomitic limestone, gray clay, dark buff clay 70-20-10, marcasite 4/10 a speck blende	OIL - 178
180	182½	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 92-8, marcasite 6/10, a speck blende	
182½	185	Light brown limestone, dark brown shaly limestone 96-4, marcasite ½	
185	187½	Green clay, brown dolomitic limestone 80-20, marcasite 8/10	CLAY - 185.5
187½	190	Gray clay, dark brown sugary dolomite 60-40, chocolate brown shale 1, marcasite 3/10	GLASS - 189.0
190	192½	Gray dolomitic limestone, dark brown dolomite & brown limestone 70-30, chocolate brown shale 3, marcasite 2/10	McGREGOR - 190.7
192½	195	Gray dolomitic limestone, trace marcasite	

Water table: 23'

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 116~~
Hole No. 26
Collar Elevation: 950.23'
Depth of Hole: 196.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	30	Buff dolomite	
30	40	Buffish-brown dolomite & buff dolomite, few specks marcasite	
40	50	Brown dolomite, specks calcite, marcasite 2/10, specks galena	
50	55	Brown dolomite, specks calcite, trace marcasite	
55	60	Brown dolomite, marcasite 3/10, few specks blende	
60	65	Brown dolomite, gray marcasite-speckled chert, dark brown shale 95-3-2, marcasite 5, trace blende & galena	DRAB - 62½
65	70	Brown dolomite, gray marcasite-speckled chert 92-8, trace gray shale, marcasite 12, blende 2	
70	75	Brown dolomite, brown & gray-marcasite-speckled chert 93-7, marcasite 7, blende 1	
75	80	Brown dolomite, gray marcasite-speckled chert 93-7, trace brown shale, marcasite 9, blende ½, few specks galena	
80	85	Brown dolomite, gray & marcasite-speckled chert 97-3, specks brown shale, marcasite 6, blende 1, few specks galena	
85	90	Brown dolomite, gray marcasite-speckled chert 94-6, trace brown shale, marcasite 5, blende 3, few specks galena	
90	95	Brown dolomite, gray chert 99-1, brown shale ½, marcasite 5, blende 2, trace galena	
95	100	Pale brown dolomite, gray & white chert 80-20, trace brown shale, marcasite 8, blende 1, few specks galena	
100	105	Small recovery: Brown dolomite, gray chert 97-3, marcasite 6, blende ½	
105	110	Brown dolomite, gray marcasite-speckled chert 96-4, marcasite 8, blende 4/10	
110	115	Gray dolomite, gray chert 99-1, marcasite 6, blende 2	
115	120	Brown dolomite, gray chert 93-7, marcasite 10, blende 8/10	
120	125	Brown dolomite, gray & brown chert 98-2, marcasite 8, blende 2/10	
125	130	Light brown dolomite, gray-brown chert 94-6, marcasite 3, blende 1/10	
130	135	Light brown dolomite, gray-brown chert 94-6, marcasite 7, blende 1/10	
135	140	Dark brown dolomite, marcasite-speckled chert 94-6, marcasite 7, trace blende	
140	145	Dark brown dolomite, marcasite-speckled 92-8, marcasite 13, few specks blende	
145	150	Brown dolomite, brown & marcasite-speckled chert 88-12, marcasite 8, few specks blende	
150	155	Brown dolomite, gray-brown & brown chert 92-8, marcasite 5	
155	160	Brown dolomite, gray dolomite 70-30, marcasite 3	GRAY - 158.5
160	162½	Gray dolomite, marcasite 4	
162½	165	Gray dolomite, marcasite 2	
165	170	No recovery	
170	172½	Brown-gray dolomite, marcasite 6, blende 2	
172½	175	Brown-gray dolomite, marcasite 9, blende 3	BLUE - 175.0
175	177½	Gray dark-speckled dolomite, marcasite 6, blende 3	
177½	180	Gray dark-speckled dolomite, marcasite 5, blende 2	
180	182½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 4, blende 1	OIL - 180.5
182½	185	Brown dolomitic limestone, marcasite 2, blende 6/10	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 116~~
Hole No. 26 (Continued)
Collar Elevation: 950.23'
Depth of Hole: 196.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
185	187½	Brown dolomitic limestone, brown clay 80-20, marcasite 2, blende 7/10	CLAY - 187.5
187½	190	Green clay, trace marcasite, trace blende	GLASS - 192.5
190	192½	Gray clay (Bentonitic)	
192½	195	Gray dolomitic limestone, brown dolomite & chocolate brown shale 90-10, marcasite 2, blende ½	McGREGOR - 192.7

Water table: 26'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
65	70	0.80	11.34	0.12
70	75	Nil	10.27	0.12
75	80	0.10	9.84	0.12
80	85	0.15	8.98	0.13
85	90	1.70	7.49	0.13
90	95	0.55	5.77	0.13
95	100	0.10	9.84	0.13
100	105	0.30	13.48	Trace
105	110	1.35	15.40	Trace
110	115	1.65	11.98	0.16
115	120	0.75	17.33	0.16
120	125	0.45	11.98	0.12
170	172½	2.55	7.91	0.16
172½	175	2.05	7.70	0.12
175	177½	1.30	10.91	0.13
177½	180	1.50	8.34	0.13
180	182½	0.75	10.70	0.16
182½	185	0.45	7.70	0.16
185	187½	1.00	7.70	0.16

Lafayette County
~~Sec. [illegible] 151~~

~~Serial No. 117~~
Hole No. 27
Collar Elevation: 956.35'
Depth of Hole: 211.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/11/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff dolomite, few specks limonite & marcasite
10	15	Buff dolomite, few specks limonite & marcasite, a speck blende
15	20	Buff dolomite, trace limonite
20	30	Buff dolomite, few specks limonite
30	35	Buff dolomite
35	40	Buff dolomite, brown dolomite 50-50, trace marcasite, a speck galena
40	45	Brown dolomite (coarse cuttings), buff dolomite 70-30, marcasite ½
45	50	Brown dolomite, marcasite 3/10, a speck blende & galena
50	55	Brown dolomite, marcasite 1/10, thin trace blende
55	60	Brown dolomite, a speck calcite, trace marcasite
60	65	Brown dolomite, a speck calcite, marcasite 1/10, a speck blende
65	70	Brown dolomite, gray marcasite-speckled & brown chert 93-7, marcasite 1/10, blende 2/10 — DRAB - 67
70	75	Brown dolomite, gray marcasite-speckled & brown chert 93-8, marcasite 1, blende 1/10
75	80	Brown dolomite, brown & gray chert 96-4, marcasite 8/10, blende 1/10, trace galena
80	85	Brown dolomite, gray-brown chert 93-7, blende 5, marcasite 1 galena 1/10
85	87½	Brown dolomite, trace gray-brown chert, blende 2, marcasite 7/10, trace galena
87½	90	Brown dolomite, tan & gray-brown chert 95-5, blende 2, marcasite 1, trace galena
90	95	Brown dolomite, gray-brown chert 98-2, marcasite 2, blende 8/10, few specks galena
95	100	Brown dolomite, gray & white chert 92-8, marcasite 4, blende 1, trace galena
100	105	Brown-gray dolomite, gray & white chert 90-10, marcasite 2, blende 1, specks galena
105	110	Brown dolomite, white chert 99-1, trace gray shale, marcasite 7, blende 2, specks galena
110	115	Brown dolomite, gray & gray-brown chert 82-18, marcasite 4, blende 7/10, trace galena
115	120	Brown dolomite, gray-brown & marcasite-speckled chert 96-4, marcasite 7, blende 2
120	125	Brown dolomite, gray-brown chert 94-6, marcasite 3, blende ½
125	130	Brown dolomite, gray & tan chert 95-5, marcasite 2, blende 2/10
130	135	Brown dolomite, tan chert 97-3, marcasite 6, blende 1
135	140	Brown dolomite, marcasite 3, blende 4/10
140	145	Brown dolomite, marcasite 4, few specks blende
145	150	Very small recovery: Brown dolomite, gray-brown & marcasite-speckled chert 92-8, marcasite 6, blende 3
150	155	Small recovery: Brown dolomite, marcasite-speckled chert 90-10, marcasite 10, blende 4
155	160	Brown dolomite, brown chert 93-7, marcasite 3, blende 1/10
160	165	Brown dolomite, trace brown chert, marcasite 3, blende 6/10
165	167½	Brown dolomite, marcasite 14, blende 4
167½	170	Brown dolomite, marcasite 9, blende 4 — GRAY - 167½
170	172½	Gray dolomite, marcasite 19, blende 3
172½	175	Gray dolomite, marcasite 10, blende 2

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 117~~
Hole No. 27 (Continued)
Collar Elevation: 956.35'
Depth of Hole: 211.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/11/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
175	177½	Small recovery: Brown-gray dolomite, marcasite 18, blende 7	
177½	180	Very small recovery: Brown-gray dolomite, marcasite 20, blende 12	
180	182½	Gray-brown dolomite, gray clay 95-5, marcasite 50, blende 20	
182½	185	Gray dark-speckled dolomite & gray clay, some fossils, marcasite 30, blende 8	BLUE - 182½
185	187½	Dark brown shaly limestone, gray clay 90-10, marcasite 15, blende 4	OIL - 185½
187½	190	Light brown limestone, dark brown shaly limestone 60-40, marcasite 20, blende 8	
190	192½	Light brown limestone, marcasite 15, blende 5	
192½	195	Green clay, light brown limestone 98-2, few phosphate pebbles, marcasite 1, trace blende	CLAY - 192½
195	197½	Dark brown dolomitic limestone, gray dolomite limestone, chocolate brown shale 93-5-2, marcasite 4, blende 1	GLASS - 195
197½	200	Gray & brown gray dolomitic limestone, marcasite 3, blende 7/10	McGREGOR - 197.4
200	202½	Gray marcasite-speckled dolomitic limestone, marcasite 3, blende 1	
202½	205	Gray-brown marcasite-speckled dolomitic limestone, marcasite 2, blende 4/10	
205	207½	Gray dark-speckled dolomitic limestone, marcasite 1, blende ½, few specks green shale	
207½	210	Gray dark-speckled limestone, marcasite 1, blende ½, few specks green shale	

Depth From	Depth To	Assays ZnS	FeS2	PbS
80	85	14.50	4.49	0.45
85	87½	4.62	4.28	0.16
87½	90	2.55	5.13	0.18
90	95	0.95	4.06	0.13
95	100	0.95	4.70	0.13
100	105	1.85	5.99	0.13
105	110	1.65	8.56	0.15
110	115	0.05	8.13	0.13
115	120	0.20	10.91	0.13
120	125	0.05	4.92	0.13
125	130	0.05	4.06	0.15
130	135	0.15	6.84	0.13
135	140	Nil.	6.42	0.15
140	145	Nil.	7.49	0.15
145	150	3.95	9.20	0.15
150	155	1.95	17.76	0.70
155	160	Nil.	6.84	0.13
160	165	0.50	5.56	0.13
165	167½	4.55	11.34	0.13
167½	170	3.20	8.77	0.13
170	172½	1.70	11.55	0.13
172½	175	1.20	12.84	0.13
175	177½	5.00	16.26	0.15

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 117~~
Hole No. 27 (Continued)
Collar Elevation: 956.35'
Depth of Hole: 211.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/11/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	ZnS	Assays FeS_2	PbS
177½	180	8.80	16.47	0.16
180	182½	7.95	47.00	Trace
182½	185	3.55	38.00	0.15
185	187½	2.05	22.47	0.25
187½	190	3.50	18.83	0.12
190	192½	3.55	15.62	0.12
192½	195	0.90	12.84	0.12
195	197½	0.05	10.05	0.15
197½	200	1.00	10.27	0.15
200	202½	1.65	9.63	Trace
202½	205	0.25	9.63	Trace

Lafayette County
Sec. Ref. 151

Serial No. 118
Hole No. 28
Collar Elevation: 962.44'
Depth of Hole: 203.9' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6 /15/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Soil
8	10	Buff dolomite, trace red & dark buff chert (coarse cuttings)
10	45	Buff dolomite
45	50	Dark buff dolomite, brown dolomite 95-5
50	60	Buffish-brown dolomite
60	65	Buffish-brown calcareous dolomite
65	70	Buffish-brown calcareous dolomite, few specks marcasite
70	75	Brown dolomite, brown chert 97-3, trace marcasite, a speck blende DRAB - 72½
75	80	Brown dolomite, gray & marcasite-speckled chert 93-7, marcasite ½
80	85	Brown dolomite, gray-brown & marcasite-speckled chert 85-15, marcasite 4
85	90	Brown dolomite, gray-brown & marcasite-speckled chert 92-8, marcasite 3
90	100	Brown dolomite, gray & tan chert 94-6, marcasite 3
100	105	Pale brown dolomite, gray & white chert 80-20, marcasite 3/10
105	115	Gray-brown dolomite, gray, white & marcasite-speckled chert 95-5, marcasite 1½
115	125	Brown dolomite, gray-brown & tan chert 93-7, marcasite 6/10, blende 1/10
125	135	Brown dolomite, tan & marcasite-speckled chert 95-5, marcasite 2, trace blende
135	140	Brown dolomite, trace tan chert, marcasite 5, few specks blende
140	150	Brown dolomite, gray-brown & marcasite-speckled chert 94-6, marcasite 8, specks blende
150	160	Brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 5, specks blende

Continued

Lafa[illegible]te County
~~Sec. Ref. 151~~

~~Serial No. 118~~
Hole No. 28 (Continued)
Collar Elevation: 962.44'
Depth of Hole: 203.9' (Measurement by steel tape)
Location: Francis M. Calvert)

Date completed: 6/15/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
160	165	Brown dolomite, marcasite-speckled chert 94-6, marcasite 15, blende 4	
165	167½	Brown dolomite, gray marcasite-speckled dolomite 80-20, marcasite 20, blende 6	GRAY - 167
167½	170	Gray marcasite-speckled dolomite, marcasite 9, blende 2	
170	172½	Gray dolomite (some marcasite-speckled), marcasite 8, blende 3	
172½	175	Gray marcasite-speckled dolomite, marcasite 7, blende 1	
175	177½	Brown-gray dolomite, marcasite 4, blende 3/10	
177½	180	Gray-brown dolomite, marcasite 10, blende 2/10	
180	182½	Gray dolomite, marcasite 3, trace blende	BLUE - 182½
182½	185	Gray clay, gray marcasite-speckled dolomite 60-40, marcasite 6, specks blende	
185	187½	Gray dark-speckled dolomite, gray clay 70-30, marcasite 8, specks blende	OIL - 188
187½	190	Brown marcasite-speckled dolomite, gray clay 80-20, marcasite 14, a speck blende	
190	192½	Brown fossiliferous shaly limestone & brown clay, marcasite 7 blende 1/10	CLAY - 195
192½	195	Brown fossiliferous shaly limestone & brown clay, green clay 95-5, marcasite 2, trace blende	
195	197½	Gray & green clay, gray fossiliferous dolomitic limestone 80-20, marcasite 1, few specks blende	
197½	200	Gray clay, brown dolomitic limestone 70-30, marcasite 3/10, few phosphate pebbles	GLASS - 199.2
200	202½	Fairly coarse cuttings: Brown dolomitic limestone, gray dolomitic limestone 50-50, marcasite 4/10, few specks blende	McGREGOR - 201.2

Depth From	Depth To	Assays ZnS	FeS_2	PbS
160	165	2.65	16.69	Trace
165	167½	2.60	17.12	0.16
167½	170	0.70	11.34	0.13
170	172½	1.40	13.26	0.13
172½	175	0.70	11.34	0.13

Lafayette County
~~Sec. [illegible] T. 151~~

~~Serial No. 119~~
Hole No. 29
Collar Elevation: 967.59'
Depth of Hole: 220'
Location: Francis M. Calvert

Date completed: 6/18/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	6	Buff-brown clay
6	10	Buff dolomite, few cuttings gray-brown dolomite, specks green shale
10	20	Buff dolomite, few specks marcasite
20	55	Buff dolomite
55	70	Dark buff dolomite
70	75	Dark buff dolomite, few specks marcasite & calcite
75	80	Brown-gray dolomite, dark buff dolomite 60-40, brown chert 4, trace marcasit
80	85	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 3
85	90	Brown dolomite, gray-brown chert 94-6, marcasite 2½
90	100	Brown dolomite, gray-brown chert 95-5, marcasite 2
100	110	Brown dolomite, gray chert 99-1, marcasite 4/10
110	120	Pale brown-gray dolomite, gray & white chert 92-8, trace green shale, marcasite 7/10
120	130	Pale brown-gray dolomite, gray & white chert 93-7, green shale ½, marcasite 3
130	135	Pale brown-gray dolomite, gray & white chert 97-3, trace green shale, marcasite 2, blende ½
135	140	Light brown dolomite, light tan chert 98-2, trace green shale, marcasite 1, blende 4/10
140	145	Brown dolomite, tan & marcasite-speckled chert 97-3, few specks green shale, marcasite 2, blende 1
145	150	Brown marcasite-speckled dolomite, marcasite 18, blende 3
150	155	Dark brown marcasite-speckled dolomite, marcasite 25, blende 4
155	157½	Dark brown marcasite-speckled dolomite, marcasite-speckled chert 93-7, marcasite 20, blende 3
157½	160	Brown dolomite, gray marcasite-speckled chert 82-18, marcasite 22, blende 1
160	165	Dark brown dolomite, marcasite-speckled chert 85-15, marcasite 15, blende 2/10
165	170	Dark brown marcasite-speckled dolomite, marcasite 15, blende ½
170	172½	Dark brown marcasite-speckled dolomite, marcasite-speckled 99-1, marcasite 9, blende 4
172½	175	Gray dolomite, brown dolomite 90-10, marcasite 5, blende 7
175	177½	Gray dolomite, marcasite 2, blende 4/10 — GRAY - 172.7
177½	180	Gray marcasite-speckled dolomite, marcasite 5, blende 1
180	182½	Brown-gray marcasite-speckled dolomite, marcasite 15, trace blende
182½	185	Brown-gray marcasite-speckled dolomite, marcasite 10, blende 1
185	187½	Brown-gray marcasite-speckled dolomite, trace gray clay, marcasite 10, blende 2 — BLUE - 187½
187½	190	Gray dark-speckled dolomite, marcasite 8, blende 8/10
190	192½	Gray dark-speckled dolomite, marcasite 4, blende 2/10
192½	195	Brown fossiliferous dolomitic limestone, gray clay & gray dark-speckled dolomite 60-40, marcasite 60, blende 20 — OIL - 193½
195	197½	Brown fossiliferous dolomitic limestone & brown shaly limestone, marcasite 40, blende 15
197½	200	Light brown limestone & dark brown shaly limestone, marcasite 8, blende 4
200	202½	Light brown limestone, green clay 80-20, marcasite 5, blende 1 — CLAY - 202
202½	205	Green clay, little light brown limestone ravellings, marcasite 1, trace blende
205	207½	Dark brown sugary dolomite, chocolate brown shale 97-3, light brown limestone (Oilrock) ravellings 10%, calcite 1, marcasite 20, blende 4 — GLASS - 205

Continued

~~Serial No. 119~~
Hole No. 29 (Continued)
Collar Elevation: 967.59'
Depth of Hole: 220'
Location: Francis M. Calvert

Lafayette County
~~Sec. Nor. 151~~

Date completed: 6/18/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
207½	210	Gray dolomitic limestone, light brown limestone (Oilrock ravellings) 20, marcasite 12, blende 3 — McGREGOR - 207½
210	212½	Gray dolomitic limestone, light brown limestone (Oilrock ravellings) 20, marcasite 5, blende 4
212½	215	Gray-brown dolomitic limestone, light brown limestone (Oilrock ravellings) 10, marcasite 8, blende 6, few specks galena
215	217½	Gray dolomitic limestone, trace Oilrock ravellings, marcasite 5, blende 2
217½	220	Gray dolomitic limestone & gray clay, trace Oilrock ravellings, marcasite 2, blende 6/10

Water

Driller's remarks:
Broken ground 145-175
Soft ground 177½ - 180 & 187½ - 220

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
140	145	1.05	2.99	0.12
145	150	0.80	10.00	0.12
150	155	2.70	12.19	0.13
155	157½	2.05	11.77	0.13
157½	160	0.20	11.55	0.13
160	165	Nil	12.19	0.15
165	170	0.20	14.55	0.13
170	172½	6.10	9.20	0.16
172½	175	4.35	7.70	0.15
175	177½	1.10	4.06	0.15
177½	180	0.50	8.34	0.16
180	182½	0.15	19.04	0.17
182½	185	1.80	12.41	0.13
185	187½	0.75	13.26	0.12
187½	190	0.10	12.62	0.12
190	192½	0.05	11.98	0.12
192½	195	13.00	52.64	0.20
195	197½	6.25	46.65	0.13
197½	200	2.20	14.76	0.15
200	202½	1.65	19.26	0.15
202½	205	0.55	16.47	0.13
205	207½	2.15	36.59	0.13
207½	210	1.55	25.68	0.13
210	212½	5.35	14.76	0.16
212½	215	6.10	13.91	0.17
215	217½	1.85	19.68	0.15
217½	220	1.20	11.98	0.12

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 120~~
Hole No. 30
Collar Elevation: 972.03'
Depth of Hole: 225.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/23/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Brown-buff clay
8	15	Coarse cuttings: Buff dolomite
15	25	Buff dolomite, few specks marcasite
25	45	Buff dolomite, specks limonite
45	65	Buff dolomite
65	75	Buff calcareous dolomite
75	80	Buff calcareous dolomite DRAB - 82½
80	85	Buff dolomite, gray &brown & white chert 95-5
85	90	Buff dolomite, gray & brown chert 93-7, marcasite 4/10
90	95	Buff dolomite, gray & brown & white chert 92-8, marcasite 3/10
95	100	Brown & buffish-brown dolomite, gray & brown chert 94-6, marcasite 7/10
100	105	Brown & buffish-brown dolomite, gray & brown chert 93-7, marcasite 2/10
105	110	Brown & buffish-brown dolomite, gray & brown chert 94-6, marcasite 1/10
110	120	Pale brown dolomite, light gray & white chert 92-8, trace marcasite
120	130	Pale brown dolomite, gray chert 99-1, marcasite 3/10
130	140	Brown dolomite, gray-brown chert, gray shale 95-3-2, marcasite 2/10
140	150	Brown dolomite, brown & tan chert 95-5, gray shale 2, marcasite 1/10
150	155	Brown dolomite, brown chert trace, gray shale 1, marcasite 1/10
155	160	Brown dolomite, trace gray-brown chert, trace gray shale, marcasite 1/10
160	165	Brown dolomite, tan chert 95-5, few specks gray shale, marcasite 1/10
165	170	Brown dolomite, gray, brown & tan chert, 85-15, marcasite 1.5
170	175	Brown dolomite, gray & brown chert 92-8, marcasite 5
175	180	Brown dolomite, gray & tan chert 96-4, marcasite 7
180	185	Gray dolomite, marcasite 5, Top "GRAY" - 180
185	187½	Gray dolomite, trace gray clay, trace dark gray clay, marcasite 2
187½	190	Gray dolomite, few specks dark gray clay, marcasite 6/10
190	192½	Brown-gray dolomite, marcasite 1
192½	195	Brown-gray dolomite, trace dark gray clay, marcasite 3
195	197½	Gray & brown-gray dark speckled dolomite & gray clay 85-15, marcasite 2 BLUE - 195
197½	200	Gray dark speckled dolomite, trace gray clay, marcasite 2
200	202½	Gray dark-speckled dolomite & gray clay 70-30, marcasite ½
202½	205	Brown dolomitic limestone, gray dark speckled dolomite & gray clay 80-20, marcasite 6/10, few specks blende OIL- 203
205	207½	Brown fossiliferous dolomitic limestone, marcasite 4/10, few specks blende
207½	210	Brown limestone, few fossils, marcasite 3/10, specks blende
210	212½	Brown fossiliferous limestone, green clay 60-40, marcasite 3/10, few phosphate pebbles CLAYBED - 211.5
212½	215	Bentonite, brown dolomitic limestone 80-20, trace dark brown shaly limestone, marcasite 1/10 GLASS - 214.5
215	217½	Dark brown dolomitic limestone, marcasite 12
217½	220	Gray dolomitic limestone, dark brown dolomitic limestone 80-20, few specks chocolate brown shale, marcasite 1, specks blende McGREGOR - 218
220	222½	Gray dark speckled dolomite, Oilrock & Glassrock ravellings 5, marcasite 1
222½	225	Brown-gray dolomitic limestone, Oilrock & Glassrock ravellings 5, marcasite 4/10

Water table: 48½'

Lafayette County
~~Sec. [illegible] 151~~

~~Serial No. 121~~
Hole No. 31
Collar Elevation: 930.42'
Depth of Hole: 175.7' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/25/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	8	Buff clay
8	15	Buff dolomite, dark buff chert & red chert 95-5, a speck marcasite
15	20	Buff dolomite, dark buff chert & red chert 92-8, specks marcasite
20	25	Buffish-brown dolomite, dark buff chert & red chert 98-2, specks marcasite
25	30	Buffish-brown dolomite, dark buff chert & red chert 98-2, marcasite 3/10
30	35	Brown dolomite, dark buff chert & red chert 99-1, marcasite 1/10
35	40	Brown dolomite, trace limonite-stained clay, marcasite 2/10
40	45	Brown dolomite, specks calcite, trace marcasite
45	50	Brown dolomite, gray chert 98-2, marcasite 1 DRAB - 47½
50	60	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 5, trace blende
60	70	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 3, few specks blende
70	80	Brown dolomite, gray & white chert 91-9, marcasite 2, few specks blende
80	85	Brown dolomite, few specks gray chert, marcasite 4/10, specks blende
85	90	Brown dolomite, gray chert 96-4, marcasite 2, trace blende
90	95	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 4, blende ½
95	100	Brown dolomite, gray & marcasite-speckled chert 99-1, marcasite 5, blende 4
100	102½	Brown dolomite, gray-brown & tan chert 96-4, marcasite 6, blende 6/10
102½	105	Brown dolomite, gray-brown chert 94-6, marcasite 9, blende 1
105	110	Brown dolomite, tan chert 93-7, dark buff chert ravellings from top of hole 5, marcasite 12, blende 1
110	115	Brown dolomite, marcasite-speckled chert 91-9, marcasite 11, blende ½
115	120	Brown dolomite, marcasite-speckled chert 98-2, marcasite 16, blende 1½
120	125	Brown dolomite, tan & marcasite-speckled chert 95-5, marcasite 6, few specks blende
125	130	Brown dolomite, marcasite-speckled chert 80-20, marcasite 20 blende ½(?)
130	135	Brown dolomite, marcasite-speckled chert 90-10, marcasite 15 few specks blende
135	140	Gray dolomite, brown dolomite 80-20, marcasite-speckled chert 3, marcasite 8, trace blende, Top "GRAY" - 136
140	142½	Gray dolomite, marcasite 8, few specks blende
142½	145	Gray dolomite, marcasite 5
145	147½	Gray dolomite, marcasite 12, few specks blende
147½	150	Brown gray dolomite, marcasite 9, blende 2/10
150	152½	Brown-gray dolomite, marcasite 3, trace blende
152½	155	Gray dark-speckled marcasite-speckled dolomite, marcasite 10 (?), few specks blende BLUE - 152½
155	157½	Gray dark-speckled dolomite, marcasite 10 (?), blende 3/10
157½	160	Gray dark-speckled dolomite, marcasite 5, trace blende
160	162½	Gray-brown fossiliferous dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 6, specks blende OILROCK - 160½
162½	165	Brown fossiliferous dolomitic limestone, & dark brown shaly limestone, marcasite 4/10, specks blende & galena
165	167½	Green clay & gray clay (bentonitic), (considerable buff dolomitic ravellings), gray-brown & brown dolomitic limestone 80-20, marcasite ½ CLAY - 165½

Continued

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 121~~
Hole No. 31 (Continued)
Collar Elevation: 930.42'
Depth of Hole: 175.7' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/25/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
167½	170	Dark brown limestone, chocolate brown shale 99-1, specks calcite, marcasite 3, few specks blende GLASS -167½
170	172½	Gray dolomitic limestone, brown limestone 90-10, marcasite 8, few specks blende
172½	175	Brown-gray marcasite-speckled dolomite limestone, marcasite 3, specks blende McGREGOR - 170.2

Water table: 8'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
90	95	1.25	10.70	0.15
95	100	5.50	9.20	0.15
100	102½	0.65	11.12	0.15
102½	105	0.70	14.12	Trace
105	110	0.10	13.91	0.12
110	115	0.25	13.48	0.12
115	120	0.30	13.48	Trace
120	125	0.05	7.49	0.12
125	130	0.10	21.40	0.12

Lafayette County
Sec. Ref. 151

Serial No. 122
Hole No. 32
Collar Elevation: 931.38'
Depth of Hole: 182' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	7	Soil
7	15	Brown-buff dolomite, creek gravel 85-15, limonite 1, coarse cuttings
15	20	Brown-buff dolomite, creek gravel 80-20, few specks limonite, coarse cuttings
20	30	Brown-buff dolomite, creek gravel 97-3, trace marcasite
30	40	Buffish-brown calcareous dolomite, creek gravel 96-4, trace marcasite
40	45	Buffish-brown calcareous dolomite, creek gravel 98-2, few specks marcasite
45	50	Brown calcareous dolomite, trace brown chert, creek gravel 1, marcasite 3/10, a speck blende DRAB - 50
50	55	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 2, a speck blende
55	60	Brown dolomite, gray-brown chert 94-6, marcasite 3, trace blende
60	70	Brown dolomite, brown & gray-brown chert 90-10, marcasite 1, a speck blende
70	80	Brown dolomite, gray & white chert 88-12, marcasite 2, a speck blende

Continued

Lafay[illegible]e County
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~~Serial No. 122~~
Hole No. 32 (Continued)
Collar Elevation: 931.38'
Depth of Hole: 182 (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 6/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
80	90	Gray dolomite, gray & white chert 95-5, marcasite ½, trace blende	
90	100	Pale brown dolomite, gray & tan chert 94-6, marcasite 4, blende 1/10	
100	110	Brown dolomite gray & tan chert 97-3, marcasite 5, blende 2/10	
110	115	Brown dolomite, tan chert 98-2, green shale 2, marcasite 4, trace blende	
115	120	Brown dolomite, green shale 95-5, marcasite 4	
120	125	Brown dolomite, green shale 93-7, marcasite 12, a speck blende	
125	130	Brown dolomite, tan chert 97-3, green shale 1, marcasite 8	
130	135	Brown dolomite, tan & brown chert 93-7, green shale 4, marcasite 4, specks blende	
135	140	Brown dolomite, tan & brown chert 99-1, trace green shale, marcasite 18	
140	145	Gray dolomite, brown dolomite 80-20, marcasite 8, specks blende	GRAY - 141
145	147½	Gray dolomite, marcasite 7	
147½	150	Gray dolomite, marcasite 2	
150	152½	Brown-gray dolomite, marcasite 5, few specks blende	
152½	155	Brown-gray dolomite, marcasite 3, specks blende	
155	157½	Gray dolomite, marcasite 4, specks blende	
157½	160	Gray dolomite, few specks gray dark-speckled dolomite, marcasite 4, specks blende	BLUE - 160
160	162½	Gray dark-speckled dolomite, marcasite 30, blende 25	
162½	165	Gray dark-speckled dolomite, marcasite 40, blende 18	
165	167½	Gray dark-speckled dolomite, marcasite 50, blende 35	
167½	170	Very soft light brown limestone, dark brown shale 80-20, marcasite 15, blende 10	OIL - 167½
170	172½	Very soft light brown limestone, dark brown shaly limestone, marcasite 5, blende 3	
172½	175	Very soft brown shaly limestone, green clay 95-5, marcasite 2, blende 1, few specks galena	CLAYBED - 174.9
175	177½	Dark brown dolomitic limestone & limestone, gray clay 5, marcasite 7, blende 4	GLASS - 175.2
177½	178½	Gray dolomitic limestone, brown dolomitic limestone 80-20, marcasite 8, blende 5	McGREGOR - 177.7
178½	180	Gray dolomitic limestone, brown dolomitic limestone ravellings 2, marcasite 12, blende 8	
180	182½	Gray dolomitic limestone, brown dolomitic limestone ravellings 3, marcasite 51, blende 7	

175 - 182.5 Caving from Blue

Water table: 8'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
160	162½	32.80	36.80	0.16
162½	165	14.50	25.25	0.13
165	167½	20.05	28.24	0.13
167½	170	13.75	18.83	0.12
170	172½	4.90	16.69	0.12
172½	175	2.65	15.19	0.13
175	177½	8.55	21.40	0.18
177½	178½	13.50	18.80	0.15
178½	180	10.35	12.41	0.12
180	182½	9.20	16.90	0.13

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 123~~
Hole No. 33
Collar Elevation: 938.41'
Depth of Hole: 184' (Measured)
Location: Francis M. Calvert

Date completed: 7/6/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	4	Soil	
4	10	Buff dolomite, trace brown-gray dolomite, trace marcasite, few specks of blende	
10	15	Buff dolomite, trace brown-gray dolomite, trace marcasite, few specks blende, a speck of galena	
15	20	Dark buff dolomite, thin trace limonite and marcasite, few specks of blende and galena	
20	25	Buffish-brown dolomite, few specks marcasite	
25	30	Brown-gray dolomite, few specks of marcasite	
30	35	Pale brown dolomite (slightly calcareous) marcasite 2/10	
35	40	Buffish brown calcareous dolomite, marcasite 3/10	
40	45	Buffish brown calcareous dolomite, marcasite 5/10	
45	50	Buffish brown dolomite, marcasite 1	
50	55	Buffish brown dolomite, gray-brown chert and brown chert 93-7, marcasite 1	DRAB - 52.5'
55	60	Brown dolomite, gray-brown chert 92-8, marcasite 7/10	
60	70	Brown dolomite, gray-brown and tan chert 93-7, marcasite 2	
70	80	Brown dolomite, gray-brown chert 94-6, marcasite 3	
80	90	Pale brown dolomite, gray and white chert 85-15, marcasite 4/10, few specks of blende	
90	100	Pale brown dolomite, gray and white chert 95-5, marcasite 1/2, blende 2/10	
100	105	Brown dolomite, gray-brown chert 92-8, marcasite 3, blende 1/2	
105	110	Brown dolomite, gray-brown chert 98-2, light gray shale 1, marcasite 2, blende 1	
110	115	Lost cuttings	
115	120	Very small recovery: Brown dolomite, gray chert 94-6, marcasite 10, Blende 30	
120	125	Only a tablespoonful of cuttings plus one coarse piece of brown-gray dolomite, marcasite 10, blende 25	
125	127½	Very small recovery: Brown-gray dolomite, few specks gray chert, trace gray cave filling, marcasite 8, blende 15	
127½	130	Very small recovery: Gray-brown dolomite, few specks of gray chert, marcasite 8, blende 5	
130	135	Very small recovery: Coarse cuts brown dolomite, marcasite 4, blende 1	
135	140	Lost cuttings	
140	142	Gray-brown dolomite, gray chert 97-3, buff dolomite (reamings) 40, marcasite 15, blende 10	
142	145	Gray-brown coarse green vuggy dolomite, gray & tan chert 97-3, trace of gray clay, marcasite 10, blende 1	
145	147	Gray-brown dolomite, gray-brown chert and marcasite-speckled chert 80-20, marcasite 20, blende 8	
147	150	Brown dolomite, marcasite-speckled chert and gray-brown chert 75-25, marcasite 14, blende 4	
150	152½	Brown dolomite, trace gray-brown chert, marcasite 25, blende 8	
152½	155	Gray dolomite, marcasite 10, blende 1/2	GRAY - 152.5'
155	157½	Gray marcasite-speckled dolomite, marcasite 18, blende 7	
157½	160	Gray coarse-grained dolomite, marcasite 20, blende 9	
160	162½	Small recovery: Gray coarse-grained dolomite, marcasite 25, blende 25	
162½	165	Small recovery: Marcasite, Blende, gray dolomite 78-20-2	

Continued

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~~Serial No. 123~~
Hole No. 33 (Continued)
Collar Elevation: 938.41'
Depth of Hole: 184' (Measured)
Location: Francis M. Calvert

Lafayette County
~~Sec. Ref. 151~~

Date completed: 7/6/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
165	167½	Good recovery: Gray marcasite-speckled dolomite, marcasite 70, blende 10, trace gray clay	BLUE - 165' (?)
167½	170	Small recovery: Gray marcasite-speckled dolomite, gray clay, marcasite 55, blende 15	
170	172½	Fair recovery: Gray marcasite-speckled dolomite, brown dolomitic limestone 80-20, some gray clay, marcasite 30, blende 12	OIL ROCK - 172'
172½	175	Brown dolomitic limestone, numerous fossils, brown shale 5, marcasite 25, blende 10	
175	177½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 60, blende 10	CLAY - 177'
177½	180	Green clay, considerable ravelling from Oil Rock, marcasite 50, blende 10, dark brown dolomitic limestone	GLASS - 179.8'
180	182½	Gray dolomitic limestone, trace dark brown dolomite, marcasite 30, blende 15	McGREGOR - 180.1'
182½	185	Gray dolomitic limestone, marcasite 40, blende 15	

(Mineralization below the Claybed is known to be ravelling from the Blue Horizon and probably most of it from 170 to 185 feet is ravellings.)

Driller's Remarks: 8½" hole 0 to 25 feet. 6½" hole 25 to 140 feet. 4 7/8" hole 140 to 185 feet. Small casing set to 151 feet. An opening at 120½ to 122 & 123½ to 124½ feet. Hole caving badly from 177½ feet to bottom.
Water table: 15'

Depth From	Depth To	Zn S	Assays FeS_2	PbS
100	105	0.75	7.27	Trace
105	110	0.60	4.28	Trace
115	120	28.90	14.33	Trace
120	125	15.20	11.55	Trace
125	127½	19.20	7.70	0.12
127½	130	3.55	6.20	Trace
130	135	1.80	3.21	Trace
140	142	12.80	11.98	Trace
142	145	0.60	20.54	Trace
145	147½	5.50	24.61	0.12
147½	150	2.70	24.39	Trace
150	152½	3.25	25.68	Trace
152½	155	1.50	15.85	Trace
155	157½	9.55	34.88	0.13
157½	160	5.95	31.24	Trace
160	162½	28.60	40.66	0.13
162½	165	13.85	75.97	0.13
165	167½	8.65	64.41	0.12
167½	170	7.75	71.69	0.12
170	172½	8.80	29.90	0.12
172½	175	9.25	28.89	0.13
175	177½	7.00	50.93	0.13
177½	180	6.40	39.59	0.16
180	182½	17.90	43.87	0.15
182½	185	15.95	39.80	0.12

~~Serial No. 124~~
Hole No. 34
Collar Elevation: 975.90'
Depth of Hole: 220' (Measured)
Location: Francis M. Calvert

Lafayette County
~~Sec. of. 151~~

Date completed: 7/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Brown-buff clay	
10	60	Buff dolomite	
60	85	Dark buff dolomite	
85	90	Buff & dark buff dolomite, brown dolomite, gray-brown chert 80-17-3, few specks of marcasite	DRAB - 87.5'
90	100	Brown & buffish-brown dolomite, gray-brown chert 92-8, marcasite 1/10	
100	110	Buffish-brown dolomite, brown & gray-brown chert 94-6, trace of marcasite	
110	120	Pale buffish-brown dolomite, gray and white chert 95-5, trace of marcasite	
120	130	Brown-gray dolomite, white chert 93-7, marcasite 2/10	
130	140	Gray-brown dolomite, gray chert 98-2, marcasite 2/10	
140	145	Small recovery; Brown dolomite, gray chert 96-4, few coarse cuts of buff dolomite, dark buff clay 1, marcasite 8/10	
145	150	Brown-buff dolomite, tan chert 97-3, trace dark gray clay, marcasite 1	
150	155	Brown dolomite, tan & gray-brown chert 94-6, marcasite 7	
155	160	Coarse cuts: Brown dolomite, few specks chert, marcasite 2	
160	165	Brown dolomite, tan chert 96-4, gray clay 1, marcasite 5	
165	170	Coarse cuts: Brown dolomite, gray-brown chert 94-6, marcasite 3	
170	175	Brown dolomite, gray-brown chert 92-8, marcasite 5	
175	180	Brown dolomite, gray-brown chert 93-7, trace brown chert, trace gray clay, marcasite 6	
180	185	Brown dolomite, gray-brown chert 98-2, marcasite 8	
185	190	Gray dolomite, brown dolomite 95-5, marcasite 7	GRAY - 185'
190	195	Lost cuttings - no recovery	
195	197½	Gray dolomite, marcasite 12	
197½	200	Gray dolomite, marcasite 9	BLUE - 200'
200	202½	Gray dark-speckled dolomite, ravelled from 'Drab' 10%, marcasite 6	
202½	205	Gray dark-speckled dolomite, trace gray clay, ravelled from 'Drab' 4%, marcasite 4	
205	207½	Tan fossiliferous limestone, gray dark-speckled dolomite 98-2, marcasite 1, a speck of blende	OILROCK - 205'
207½	210	Light brown fossiliferous dolomitic limestone, marcasite 6/10, trace of blende	
210	212½	Tan fossiliferous limestone, marcasite 1½	
212½	215	Tan and light gray fossiliferous limestone, green clay 60-40, marcasite 1½, few phosphate nodules	CLAYBED - 214'
215	217½	Dark brown dolomite, chocolate brown shale 90-10, few specks gray dolomitic limestone, marcasite ½, (measured depth of hole with steel tape at this point - measured 219.0 feet)	GLASS - 217.0 (per driller)
217½	218½	Gray dolomitic limestone, Glassrock ravellings 8%, marcasite 8/10	McGREGOR - 219.0' per measure

6½" hole to 172 feet
4 7/8" hole to 172 to 220 feet
Set 172 feet of small casing
6" crack at 142 feet
Broken ground and loose 140 to 195 feet.
Hit a crack at 195 feet

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 125~~
Hole No. 35
Collar Elevation: 966.69'
Depth of Hole: 205.2' (Measured)
Location: Francis M. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	3½	Soil	
3½	10	Buff dolomite (coarse cuts)	
10	20	Buff dolomite (rather coarse cuts)	
20	45	Buff dolomite	
45	55	Rather dark buff dolomite	
55	65	Rather dark buff dolomite (fine cuts)	
65	70	Dark buff dolomite, trace of limonite	
70	75	Dark buff dolomite, gray dolomite 50-50, trace of white chert, trace of limonite, few specks of marcasite	
75	80	Gray dolomite, white, chert, 96-4, marcasite 1/10	DRAB - 75'
80	90	Pale brown-gray dolomite, white & gray chert 92-8, marcasite 4/10	
90	100	Pale brown-gray dolomite, light gray and white chert 92-8, marcasite 3/10	
100	110	Pale brown-gray dolomite, light gray and white chert 91-9, marcasite 1/10, speck of blende	
110	120	Pale brown-gray dolomite, light gray & white chert 93-7, marcasite 1/10, few specks of blende	
120	130	Brown dolomite, gray and marcasite-speckled chert 97-3, marcasite 2/10, few specks of blende	
130	140	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, marcasite 1/2, trace of blende	
140	145	Brown dolomite, tan chert 95-5, marcasite 1, blende 2/10	
145	150	Brown marcasite-speckled dolomite, a speck of tan chert, marcasite 12, blende 3/10	
150	155	Brown dolomite, marcasite-speckled chert 94-6, marcasite 8, blende 1/10	
155	160	Brown dolomite, marcasite-speckled chert and tan chert 91-9, marcasite 7, blende 1/2	
160	165	Brown dolomite, marcasite-speckled chert, gray-brown chert 88-12, marcasite 7, Blende 2/10	
165	168	Brown dolomite, marcasite-speckled chert 91-9, marcasite 6, trace of blende	
168	170	Brown dolomite, marcasite-speckled & gray-brown chert 94-6, marcasite 5, trace of blende	
170	175	Brown dolomite, gray-brown chert 98-2, marcasite 35, blende 12	
175	177½	Gray dolomite, brown dolomite 80-20, marcasite 20, blende 4	GRAY - 175.5'
177½	180	Gray dolomite, marcasite 10, blende 1	
180	182½	Gray dolomite, gray clay 99-1, marcasite 5, blende 7/10	
182½	185	Brown-gray dolomite, marcasite 4, blende 1/2	
185	187½	Gray-brown dolomite, marcasite 3, blende 3/10	
187½	190	Gray-brown marcasite-speckled dolomite, marcasite 2, blende 1/10	
190	192½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, marcasite 4, few specks of blende	BLUE - 190.5'
192½	195	Gray dark-speckled dolomite, marcasite 4, blende 1/10	
195	197½	Dark brown shaly dolomite, light brown limestone 97-3, few specks dark gray dolomite, marcasite 2, blende 2/10	OIL ROCK - 195.0'
197½	200	Light brown limestone, green clay, dark brown dolomite 70-20-10, marcasite 3, blende 1/10, few specks of phosphorous	CLAY BED - 199.5'
200	202½	Dark brown limestone, green clay, chocolate brown shale 92-5-3, marcasite 3, blende 2/10	GLASS ROCK - 202'
202½	205	Brown limestone, gray dolomitic limestone 60-40, chocolate brown shale 1, marcasite 1, blende 2/10, a speck of galena	McGREGOR - 204'

Broken ground 145 - 170 feet Water table: 44'

(Continued)

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 125~~
Hole No. 35 (Continued)
Collar Elevation: 966.69'
Depth of Hole: 205.2' (Measured)
Location: Francis H. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	ZnS	Assays FeS_2	PbS
145	150	0.61	18.10	none
170	175	10.20	21.70	none
175	177½	2.62	13.76	none
177½	180	1.07	10.21	none

Lafayette County
Sec. Ref. 151

Serial No. 126
Hole No. 36
Collar Elevation: 963.06'
Depth of Hole: 207.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	4	Soil
4	25	Coarse cuts of buff dolomite
25	30	Buff dolomite, trace of limonite
30	35	Coarse cuts: buff dolomite, limonite 5
35	40	Coarse cuts: Dark buff dolomite, limonite 4
40	45	Coarse cuts: dark buff dolomite, limonite 1
45	50	Coarse cuts: dark buff dolomite, limonite ½
50	55	Rather coarse cuts: Dark buff dolomite, limonite 2/10
55	60	Rather coarse cuts: Dark buff dolomite, limonite 1, few specks of marcasite
60	65	Buff dolomite, brown dolomite 85-15, limonite and marcasite 2/10
65	70	Buff dolomite, brown dolomite 98-2, limonite 1/10, few specks of marcasite
70	75	Brown dolomite, buff dolomite 60-40, few specks of brown calcite, marcasite and limonite 4/10
75	80	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite ½ DRAB - 75'
80	90	Brown dolomite, brown & marcasite-speckled chert 93-7, marcasite 4
90	100	Pale brown-gray dolomite, gray chert and white chert 97-3, buff dolomite ravelling 15
100	110	Light gray dolomite, gray & white chert 95-5, marcasite 2, few specks of blende
110	120	Pale brown-gray dolomite, gray & white chert 88-12, few specks of blende
120	130	Pale brown-gray dolomite, gray & white chert 96-4, marcasite 5, trace of blende
130	140	Pale brown-gray dolomite, gray and white chert 96-4, marcasite 4, trace of blende
140	150	Pale brown-gray dolomite, gray & white chert 98-2, marcasite 4, few specks of blende
150	155	Pale brown-gray dolomite, gray & white chert 99-1, trace of dark gray clay, marcasite 7, blende 1
155	160	Pale brown-gray dolomite, gray & white chert 93-7, marcasite 6, blende 2/10
160	165	Pale brown-gray dolomite, gray & white chert 90-10, marcasite 8, few specks of blende
165	170	Light brown dolomite, white chert 99-1, marcasite 3
170	172½	Pale brown-gray dolomite, gray & white chert 97-3, marcasite 1

(Continued)

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~~Serial No. 126~~
Hole No. 36 (Continued)
Collar Elevation: 963.06'
Depth of Hole: 207.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
172½	175	Pale brown-gray dolomite, white chert 99-1, few specks gray dolomite, a speck of light green shale, marcasite 1/2, trace of blende	GRAY - 175'
175	180	Lost cuts	
180	182½	Small recovery. Gray dolomite, marcasite 20, blende 15	
182½	185	Very small recovery: Light gray dolomite, marcasite 20, blende 15 (sample contaminated with surface clay)	
185	187½	Extra coarse cuts: Light gray dolomite, marcasite 3, blende 1 (full recovery) (sample contaminated with surface clay)	
187½	190	Light gray dolomite, marcasite 12, blende 8	
190	192½	Coarse cuts: gray dolomite, gray clay 1, marcasite 15, blende 6. (sample contaminated with surface clay)	BLUE - 190'
192½	195	Gray dolomite ravelling 80, gray clay 20, marcasite 12, blende 5	
195	197½	Gray dolomite ravelling 80, gray clay and brown clay 20, marcasite 12, blende 5	OIL ROCK - 197.5'
197½	200	Gray dolomite ravelling 95, brown limestone 5, marcasite 18, blende 7	
200	202½	Mostly gray dolomite ravellings, green clay, brown limestone 60-40, marcasite 12, blende 6	CLAY - 201'
202½	205	Gray dolomite ravelling 60, dark brown sugary dolomite 40, some gray clay, marcasite 8, blende 4	GLASS - 203'
205	207½	Gray dolomitic limestone, considerable gray dolomite ravelling (coarse cuts), marcasite 30, blende 12	McGREGOR - 205'

Driller's Remarks: Lost most of cuttings: 105 to 120 feet; broken ground and lost most of cuts from 125 to 175 feet; loose broken ground, lost most cuts from 175 to 187½ feet; soft ground 192½ to 197½ feet; hard ground 197½ to 200 feet; soft ground 200 to 205 feet.

Geologist's Remarks: I question whether there is any mineralization in place below 185 feet for there was "Gray" ravelling all the way to the bottom of hole.
H.W. Davis

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
180	182½	7.65	13.43	None
185	187½	1.35	6.45	None
187½	190	13.57	14.72	None
190	192½	7.12	23.00	None
192½	195	4.35	16.88	None
195	197½	0.37	7.09	None
197½	200	7.72	17.31	None
200	202½	4.12	10.75	None
202½	205	3.07	4.35	None
205	207½	7.05	13.54	None

Lafayette County
~~Sec. [illegible] 151~~

~~Serial No. 127~~
Hole No. 37
Collar Elevation: 975.05'
Depth of Hole: 218.5' (Measured)
Location: Francis M. Calvert

Date completed: 7/29/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	20	Buff sandy clay, trace limonite	
20	35	Coarse cuts: Dark buff dolomite, trace limonite, speck of blende	
35	40	Dark buff dolomite, trace limonite	
40	45	Buff dolomite, limonite 1/2	
45	55	Dark buff dolomite, limonite 5	
55	65	Dark buff dolomite, limonite 4	
65	70	Dark buff dolomite, limonite 3	
70	75	Dark buff to buffish-brown dolomite, limonite 2	
75	80	Buffish-brown dolomite, dark buff dolomite 90-10, limonite 4	
80	85	Brown dolomite, limonite 3, few specks of marcasite, a speck of gray-brown chert	DRAB - 85'
85	90	Gray-brown dolomite, gray and marcasite-speckled chert 94-6, dark brown shale 4, ochre clay 1, marcasite and limonite 3	
90	95	Brown dolomite, marcasite-speckled chert and gray-brown chert 93-7, marcasite 4, trace of limonite	
95	100	Brown dolomite, gray chert slightly marcasite-speckled and tan chert 91-9, marcasite 2	
100	110	Brown dolomite, marcasite-speckled chert 90-10, marcasite 10	
110	115	Brown-gray dolomite, gray & white chert 98-2, marcasite 4	
115	120	Brown-gray dolomite, white chert 94-6, marcasite 7	
120	130	Brown-gray dolomite, light gray & white chert 92-8, marcasite 4, blende 2/10	
130	140	Gray-brown dolomite, gray & marcasite-speckled chert 93-7, marcasite 6, blende 2/10	
140	150	Brown dolomite, gray-brown chert 95-5, marcasite 3, trace of blende	
150	155	Brown dolomite, few specks gray chert, marcasite 2, few specks of blende	
155	160	Brown dolomite, gray chert 97-3, marcasite 5, blende 3/10	
160	165	Brown dolomite, gray chert 99-1, marcasite 9, blende 3	
165	167½	Brown dolomite, trace of calcite, marcasite 6, blende 1	
167½	170	Brown dolomite, trace calcite, few specks of marcasite-speckled chert, marcasite 5, blende 2/10	
170	175	Brown dolomite, gray-brown and marcasite-speckled chert 93-7, marcasite 7, blende 3/10	
175	180	Brown dolomite, gray-brown and tan chert 91-9, marcasite 3, trace of blende	
180	182½	Brown dolomite, gray-brown chert 97-3, marcasite 4, blende 7/10	
182½	185	Brown dolomite, gray-brown chert 99-1, marcasite 3, blende 2/10	
185	187½	Gray dolomite, brown dolomite 80-20, marcasite 2, blende 1/10	GRAY- 185.5'
187½	190	Brown-gray marcasite-speckled dolomite, trace of brown shale, marcasite 5, blende 1/2	
190	192½	Gray marcasite-speckled dolomite, gray clay, dark brown shale 95-5-1, marcasite 4, blende 2/10	
192½	195	Brown-gray dolomite, few specks dark brown shale, marcasite 3, blende 1/10	
195	197½	Brown-gray dolomite, marcasite 7, blende 8/10	
197½	200	Brown-gray dolomite, marcasite 10, blende 2	
200	202½	Gray dark-speckled marcasite-speckled dolomite, brown-gray dolomite 80-20, marcasite 12, blende 1½	BLUE - 200.5'

Continued

~~Serial No. 127~~
Hole No. 37 (Continued)
Collar Elevation: 975.05'
Depth of Hole: 218.5' (Measured)
Location: Francis M. Calvert

Lafayette County
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Date completed: 7/29/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
202½	205	Gray dark-speckled marcasite-speckled dolomite, brown-gray dolomite, marcasite 9, blende 3/10	
205	207½	Gray dark-speckled marcasite-speckled dolomite, gray clay, trace of brown dolomitic limestone, marcasite 16, blende 5	OIL ROCK - 207.5
207½	210	Light brown fossiliferous limestone, dark brown shale 90-10, marcasite 8, blende 2	
210	212½	Brown limestone and dark brown shaly limestone, green clay and shale 80-20, marcasite 13, blende 5	CLAY - 212'
212½	215	Dark brown dolomite, green clay 80-20, marcasite 10, blende 3	GLASS - 214.5'*
215	218½	Light gray fine-grained dolomitic limestone, brown dolomitic limestone 70-30, marcasite 2, blende 6/10	McGREGOR - 216.0'

*Glassrock top as indicated by the driller.

Water table: 52½'

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
160	165	2.62	5.80	None
165	167½	1.80	5.05	None
167½	170	0.82	4.40	None
205	207½	6.60	21.39	None
207½	210	2.62	10.10	None
210	212½	1.96	12.90	None
212½	215	2.02	15.70	None

Lafayette County
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~~Serial No. 130~~
Hole No. 38
Collar Elevation: 979.27'
Depth of Hole: 227' (Measured)
Location: Francis M. Calvert

Date completed: 8/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff dolomite, few specks limonite & marcasite	
10	60	Buff dolomite	
60	70	Buff dolomite, few specks limonite	
70	75	Dark buff dolomite, few specks limonite	
75	80	Buff & brown dolomite, marcasite 4/10	
80	85	Fine cuttings: Buff dolomite, marcasite 5	
85	90	Brown dolomite, dark brown chert 98-2, marcasite 2	DRAB - 87½
90	100	Pale brown dolomite, white chert 96-4, marcasite 5	
100	110	Brown dolomite, brown, gray & marcasite-speckled chert 93-7, marcasite 5	
110	120	Brown dolomite, gray chert 96-4, marcasite 2	
120	125	Pale brown-gray dolomite, white chert 92-8, marcasite 1	
125	135	Pale brown-gray dolomite, light gray & white chert 94-6, marcasite 6/10	
135	145	Pale brown dolomite, gray & white chert 91-9, marcasite 3	
145	150	Brown dolomite, gray chert 94-6, marcasite 3	
150	160	Brown dolomite, tan chert 95-5, marcasite 3/10	
160	165	Brown dolomite, trace tan chert, gray-brown clay 2, marcasite 4, few specks blende	
165	170	Brown dolomite, tan chert ½, marcasite 7, few specks blende	
170	175	Dark brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 7	
175	180	Dark brown dolomite, gray-brown & marcasite-speckled 80-20, gray-brown clay 1, marcasite 5	
180	185	Dark brown dolomite, gray-brown & marcasite-speckled 97-3, gray-brown clay 1, marcasite 4	
185	190	Gray dolomite, brown dolomite 95-5, few specks dark gray clay, marcasite 1	GRAY - 185.2
190	195	Brown-gray dolomite, marcasite 2, trace gray & dark gray clay	
195	197½	Brown-gray dolomite, marcasite 2	
197½	200	Gray-brown dolomite, marcasite 1½	
200	202½	Gray dark-speckled dolomite, gray-brown dolomite 90-10, marcasite ½, specks blende	BLUE - 200.2
202½	205	Gray dark-speckled dolomite, marcasite 1, few specks blende	
205	207½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 3, blende 1	
207½	210	Brown fossiliferous dolomite & brown shale, marcasite 10, blende 5	OILROCK - 207.5
210	212½	Brown fossiliferous dolomite & brown shale, marcasite 35, blende 12	
212½	215	Brown & brown-gray fossiliferous dolomitic limestone, green clay 80-20, marcasite 20, blende 7	CLAYBED - 214.5
215	217½	Green clay & brown-gray fossiliferous dolomitic limestone, marcasite 10, blende 5	GLASS - 217.5
217½	220	Dark brown dolomite, trace calcite, marcasite 50, blende 1 (?)	
220	222½	Gray dolomitic limestone, trace dark brown dolomite, marcasite 10, blende 2	McGREGOR - 220.0
222½	225	Gray dolomitic limestone, marcasite 7, blende 1	

Water

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 130~~
Hole No. 38 (Continued)
Collar Elevation: 979.27'
Depth of Hole: 227' (Measured)
Location: Francis M. Calvert

Date completed: 8/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	ZnS	Assays FeS_2	PbS
205	207½	4.05	15.58	None
207½	210	9.07	13.76	None
210	212½	3.37	41.39	0.35
212½	215	5.10	30.96	Trace
215	217½	1.87	26.23	None
217½	220	0.45	56.54	None
220	222½	0.97	19.24	None

Lafayette County
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Serial No. 131
Hole No. 39
Collar Elevation: 986.53'
Depth of Hole: 229.5' (Measured)
Location: Francis M. Calvert

Date completed: 8/7/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	5	Soil
5	20	Buff dolomite, few specks marcasite
20	70	Buff dolomite
70	80	Dark buff dolomite
80	85	Dark buff calcareous dolomite
85	90	Brown dolomite, buff dolomite 90-10, thin trace marcasite
90	95	Brown dolomite, buff dolomite 95-5, brown chert 1, marcasite 2/10 DRAB - 94
95	100	Buffish-brown dolomite, light gray marcasite-speckled chert 95-5, trace red-brown clay, marcasite 2
100	110	Brown dolomite, tan, marcasite-speckled & brown chert 93-7, marcasite 2
110	120	Brown dolomite, brown & gray-brown chert 97-3, marcasite 2
120	130	Brown dolomite, white & gray-brown chert 96-4, marcasite 1
130	140	Brown-gray dolomite, light gray chert 92-8, marcasite 7/10, a speck blende
140	150	Brown dolomite, gray & marcasite-speckled chert 85-15, marcasite 4
150	155	Brown dolomite, gray & marcasite-speckled chert 94-6, marcasite 5
155	160	Brown dolomite, marcasite-speckled chert 96-4, marcasite 9, trace blende
160	165	Brown dolomite, few specks marcasite-speckled chert, trace dark gray clay, marcasite 20, few specks blende
165	170	Brown dolomite, tan & gray-brown chert 97-3, marcasite 8, few specks blende
170	175	Dark brown dolomite, no chert, marcasite 5
175	180	Dark brown dolomite, tan & marcasite-speckled chert 91-9, marcasite 4, a speck blende

Continued

Lafayette County
~~Sec. [illegible] of. 151~~

~~Serial No. 131~~
Hole No. 39 (Continued)
Collar Elevation: 986.53'
Depth of Hole: 229.5' (Measured)
Location: Francis M. Calvert

Date completed: 8/7/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
180	185	Dark brown dolomite, marcasite-speckled & tan chert 92-8, marcasite 6, a speck blende	
185	190	Dark brown dolomite, marcasite-speckled chert 93-7, trace dark gray clay, marcasite 8	
190	195	Dark brown dolomite, trace tan & marcasite-speckled chert, marcasite 12	
195	197½	Dark brown dolomite, gray dolomite 95-5, marcasite 4, a speck blende	GRAY - 197.4
197½	200	Gray & brown-gray dolomite, marcasite 5, blende 4/10	
200	202½	Brown-gray dolomite, marcasite 3, blende 2/10	
202½	205	Gray marcasite-speckled dolomite, trace light gray clay, marcasite 7, a speck blende	
205	207½	Gray & brown-gray dolomite, marcasite 6, blende 4/10	
207½	210	Brown-gray dolomite, marcasite 10, blende 3	
210	212½	Gray dark-speckled dolomite & gray clay, brown-gray dolomite 70-30, marcasite 9, blende 2	
212½	215	Gray dark-speckled dolomite, marcasite 3, blende ½	
215	217½	Gray dark-speckled dolomite, few specks brown shale & brown dolomitic limestone, gray clay 1, marcasite 2, blende 4/10	OILROCK - 217.5
217½	220	Brown fossiliferous dolomitic limestone, brown shale 95-5, marcasite 2, blende ½, few specks galena	
220	222½	Brown fossiliferous dolomitic limestone & dark brown shale, gray clay 5, marcasite 3, blende 8/10, few specks galena	CLAY - 222.4
222½	225	Gray clay, brown & gray brown fossiliferous limestone, marcasite 2, blende ½, specks galena	
225	227½	Dark brown sugary dolomite & chocolate brown shale, gray dolomitic limestone, gray clay 40-40-20, marcasite 1, blende 3/10	GLASS - 225.5
227½	230	Gray marcasite-speckled dolomitic limestone, marcasite 3, blende ½	McGREGOR - 226.5

Water table: 64'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
160	165	None	13.00	None
197½	200	0.30	4.62	None
207½	210	3.15	8.71	None
210	212½	2.70	11.28	None
212½	215	1.12	9.14	None

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 132~~
Hole No. 40
Collar Elevation: 966.05'
Depth of Hole: 209.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/11/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	15	Brown clay	
15	20	Brown clay, buff dolomite, phosphate, red chert 50-35-10-5	
20	25	Dark buff dolomite (coarse cuttings), limonite 1, trace red & buff chert	
25	30	Dark buff dolomite, few specks limonite	
30	40	Dark buff limonite-speckled dolomite	
40	50	Buff dolomite	
50	60	Buff limonite-speckled dolomite	
60	70	Rather dark buff limonite-speckled dolomite	
70	75	Fine cuttings: Rather dark buff dolomite, specks calcite	
75	80	Buff dolomite, brown dolomite 95-5, few specks limonite	
80	85	Buff dolomite, brown dolomite, brown chert 90-6-4	DRAB - 82.5
85	90	Brown-buff dolomite, brown chert 90-10, trace limonite, a speck galena	
90	95	Brown dolomite & buff dolomite, gray marcasite-speckled chert & brown chert 88-12, marcasite 3, few specks galena	
95	100	Brown dolomite, gray-brown & marcasite-speckled chert 95-5, marcasite 1	
100	105	Brown dolomite, gray marcasite-speckled chert 80-20, marcasite 3	
105	110	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 7	
110	115	Buff dolomite, gray & brown chert 60-40, marcasite 2	
115	120	Fairly coarse cuttings: Gray-brown dolomite, gray chert 97-3, marcasite 1, specks galena	
120	125	Brown-buff dolomite, gray chert 96-4, marcasite 4/10, specks galena	
125	135	Brown-buff dolomite, brown & gray chert 94-6, marcasite 2/10	
135	145	Brown-buff dolomite, gray-brown chert 98-2, marcasite 4/10	
145	155	Buff dolomite, marcasite-speckled chert 95-5, marcasite 3/10	
155	160	Buffish-brown dolomite, marcasite-speckled chert 92-8, marcasite 6	
160	170	Dark brown dolomite, gray-brown & marcasite-speckled chert 92-8, marcasite 3	
170	175	Gray & brown-gray dolomite, trace brown dolomite, marcasite 7/10	GRAY - 17[illegible]
175	180	Gray dolomite, marcasite 6/10	
180	182½	Brown-gray dolomite, marcasite 1/2	
182½	185	Brown-gray dolomite, marcasite 4/10	
185	187½	Brown-gray dolomite, gray dark-speckled dolomite 98-2, marcasite 4/10	
187½	190	Gray dark-speckled dolomite, marcasite 2/10, specks galena	BLUE - 187½
190	192½	Gray dark-speckled dolomite, marcasite 2/10	
192½	195	Gray dark-speckled dolomite, brown dolomite (coarse cuttings) 70-30, marcasite 1/10	OIL - 194.2
195	197½	Brown fossiliferous limestone & brown shaly limestone, (coarse cuttings), marcasite 2/10	
197½	200	Dark tan limestone & brown shaly limestone, marcasite 2/10, a speck blende	
200	202½	Brown limestone & light gray dark-speckled fossiliferous limestone, green clay 80-20, marcasite 3/10, blende 2/10	CLAYBED - 202.0

Continued

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 132~~
Hole No. 40 (Continued)
Collar Elevation: 966.05'
Depth of Hole: 209.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/11/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
202½	205	Gray clay, brown limestone & gray fossiliferous limestone, marcasite ½, blende 3/10	GLASS - 205.0
205	207½	Dark brown limestone, chocolate brown shale 95-5 (coarse cuttings), marcasite 2/10, blende 1/10	
207½	210	Gray dolomitic limestone, brown dolomitic limestone & chocolate brown shale 80-20, marcasite 2/10, blende 1/10	McGREGOR - 208
		Water	

Lafayette County
Sec. Ref. 151

Serial No. 133
Hole No. 41
Collar Elevation: 982.35'
Depth of Hole: 227.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buffish-brown clay	
10	15	Buffish-brown clay, buff dolomite 90-10, trace red &dark buff chert, limonite 2/10	
15	20	Extra coarse cuttings: Buff dolomite, few cuttings red chert, few coarse chips limonite	
20	25	Coarse cuttings: Buff dolomite, some clay sloughing, few red chert ravellings; few coarse chips limonite	
25	30	Buff limonite-speckled dolomite	
30	50	Buff & limonite-speckled dolomite	
50	60	Buff dolomite	
60	70	Buff dolomite & dark buff limonite-speckled dolomite	
70	75	Fine cuttings: dark buff calcareous dolomite	
75	80	Fine cuttings: dark buff calcareous dolomite, trace clay & red chert ravellings, few specks limonite (ravelling?)	
80	85	Dark buff dolomite & brown dolomite 50-50, a speck marcasite	
85	90	Buffish-brown dolomite, gray chert 93-7, few specks marcasite	DRAB - 87½
90	95	Buffish-brown dolomite, gray chert 93-7, marcasite 2/10	
95	100	Buffish-brown dolomite, gray chert 92-8, marcasite 2	
100	105	Dark brown dolomite, marcasite-speckled chert, brown & tan chert 93-7, marcasite 1	
105	110	Dark brown dolomite, brown & tan chert 95-5, marcasite 6/10	
110	120	Pale brown dolomite, light gray & white chert 90-10, marcasite 2, trace blende	
120	130	Smoky gray dolomite, gray & white chert 80-20, marcasite 7/10, trace blende	
130	140	Brown dolomite, gray chert 94-6, marcasite 3	

Continued

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 133~~
Hole No. 41 (Continued)
Collar Elevation: 982.35'
Depth of Hole: 227.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
140	150	Dark brown dolomite, gray-brown & white chert 97-3, marcasite 2	
150	160	Brown dolomite, brown-gray chert 95-5, marcasite 3, blende 2/10	
160	165	Brown dolomite, few specks gray chert, marcasite 1, trace blende	
165	175	Dark brown dolomite, marcasite-speckled 93-7, marcasite 5	
175	180	Dark brown dolomite, marcasite-speckled, tan & brown chert 82-18, marcasite 9	
180	185	Dark brown dolomite, gray-brown & tan chert 96-4, marcasite 2	
185	190	Dark brown dolomite, marcasite-speckled (ravelling?) 85-15, marcasite 8	
190	192½	Brown marcasite-speckled dolomite, trace marcasite-speckled chert & brown-gray chert, marcasite 20	
192½	195	Gray dolomite, brown dolomite 80-20, few specks chert ravellings, marcasite 12	
195	197½	Gray dolomite, marcasite 10 (Small recovery)	GRAY - 193
197½	200	Gray dolomite, marcasite 25 (Small recovery)	
200	202½	Gray dolomite, buff dolomite & clay ravellings 5, marcasite 13 (Small recovery)	
202½	205	Very small recovery, some coarse cuttings: Gray dolomite, black clay 3, marcasite 8	
205	207½	Gray dolomite, trace black clay, some buffish brown clay sloughing, marcasite 20, blende 1 (?)	
207½	210	Gray dolomite, considerable buffish brown clay, marcasite 23, blende 1 (?)	
210	212½	Gray dark-speckled dolomite, little buffish brown clay, marcasite 30, specks blende	
212½	215	Gray dark-speckled dolomite, gray clay 1, marcasite 2, specks blende	
215	217½	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 80-20, marcasite 12	OIL - 217.0
217½	220	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 8, specks blende	CLAY - 219.0
220	222½	Gray clay, gray fossiliferous limestone 90-10, marcasite 5, few specks phosphate, a speck blende	
222½	225	Gray dolomitic limestone (coarse cuttings), brown dolomite, chocolate brown shale 80-19-1, considerable buff dolomite ravellings, marcasite 6	GLASS - 222½
225	227	Gray dolomitic limestone, buff dolomitic ravellings 5, marcasite 3, a speck blende	McGREGOR - 223

Water table: 59'

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 133~~
Hole No. 41 (Continued)
Collar Elevation: 982.35'
Depth of Hole: 227.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Assays ZnS	FeS_2	PbS
190	192½	0.07	20.42	None
192½	195	0.14	12.66	None
195	197½	0.13	8.38	None
197½	200	None	16.55	None
200	202½	None	9.46	None
202½	205	0.14	6.77	None
205	207½	0.67	12.47	None
207½	210	0.37	18.27	None
210	212½	0.13	40.31	None
212½	215	0.07	32.90	None

Lafayette County
Sec. Ref. 151

Serial No. 134
Hole No. 42
Collar Elevation: 989.81'
Depth of Hole: 230.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	7	Reddish brown clay, few cuttings buff dolomite
7	10	Coarse cuttings buff dolomite, gray dolomite 1, specks marcasite
10	20	Coarse cuttings buff dolomite
20	35	Buff dolomite
35	50	Buff dolomite, trace limonite
50	60	Buff dolomite, specks limonite
60	80	Buff dolomite
80	85	Dark buff dolomite (slightly calcareous)
85	90	Dark buff dolomite, few specks calcite
90	95	Dark buff dolomite, brown-gray dolomite 96-4, a speck marcasite
		DRAB - 100
95	100	Brown-gray dolomite, buff dolomite 90-10, few specks brown chert, trace marcasite
100	105	Buffish-brown dolomite, gray-brown chert 97-3, marcasite ½
105	110	Buffish-brown dolomite, tan & marcasite-speckled chert 94-6, marcasite 5
110	115	Brown dolomite, tan chert 95-5, marcasite 2
115	120	Brown dolomite, gray-brown chert 96-4, marcasite 2
120	130	Brown dolomite, brown-gray chert 93-7, marcasite 3
130	140	Pale brown-gray dolomite, gray & white chert 85-15, marcasite 1
140	150	Pale brown dolomite, gray & white chert 90-10, marcasite 2, trace blende
150	155	Pale brown-gray dolomite, gray white & marcasite-speckled dolomite 95-5, marcasite 3, blende 1/10
155	160	Brown dolomite, marcasite-speckled chert 94-6, marcasite 5, blende 1

Continued

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 134~~
Hole No. 42 (Continued)
Collar Elevation: 989.81'
Depth of Hole: 230.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
160	165	Brown dolomite, tan & gray-brown chert 95-5, marcasite 9, blende 2	
165	170	Brown dolomite, tan & gray chert 94-6, marcasite 6, blende 6/10	
170	175	Brown dolomite, tan chert 99-1, marcasite 4, blende 2/10	
175	180	Brown dolomite, gray chert 98-2, marcasite 4, trace blende	
180	185	Brown dolomite, marcasite-speckled chert 92-8, marcasite 15, few specks blende	
185	190	Dark brown dolomite, marcasite-speckled & tan chert 93-7, marcasite 8	
190	195	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 6	
195	200	Dark brown dolomite, gray-brown & marcasite-speckled chert 96-4, marcasite 8	GRAY - 201½
200	202½	Gray dolomite, brown dolomite 60-40, marcasite 7	
202½	205	Gray dolomite, marcasite 4	
205	207½	Gray dolomite, marcasite 4, trace blende	
207½	210	Brown-gray dolomite, specks calcite, marcasite 3, blende 3/10	
210	212½	Gray-brown dolomite, little buff dolomitic ravellings, marcasite 3, blende 1/10	
212½	215	Gray-brown dolomite, gray clay 90-10, marcasite 2, trace blende	BLUE - 214.7
215	217½	Dark gray dark-speckled dolomite, marcasite 6, few specks blende	
217½	220	Dark gray dark-speckled dolomite, brown dolomite 95-5, marcasite 5, few specks blende	OIL - 219.9
220	222½	Brown & tan limestone, dark brown shaly limestone 50-50, marcasite 3, few specks blende & galena	
222½	225	Brown & tan limestone, gray dolomitic limestone 80-20, trace green clay, marcasite 2, trace blende, specks galena	CLAYBED - 224.5
225	227½	Dark brown dolomitic limestone & limestone, green clay 80-20, marcasite 3, trace blende	GLASS - 225.5
227½	230	Gray dolomitic limestone, dark brown dolomitic limestone 70-30, marcasite 8, calcite 1, few specks blende & galena	McGREGOR - 228.2

Water

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
155	160	None	7.85	None
160	165	0.75	7.20	None
165	170	0.30	6.02	None
180	185	0.07	12.04	None

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 135~~
Hole No. 43
Collar Elevation: 982.22'
Depth of Hole: 226.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/20/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff clay	
10	20	Buff clay, buff dolomite 50-50	
20	50	Dark buff clay, buff dolomitic ravellings 10	
50	55	Dark buff dolomite, limonite 5 (solid @ 52' per driller)	
55	65	Dark buff dolomite, limonite 2	
65	80	Dark buff dolomite, limonite 3	
80	90	Dark buff dolomite, limonite 1, few specks calcite	
90	95	Dark buff dolomite, buffish-brown dolomite, brown chert 95-4-1, few specks marcasite, limonite 3/10, few specks marcasite-speckled chert	DRAB - 92½
95	100	Dark buff dolomite, buffish-brown marcasite-speckled dolomite, marcasite-speckled chert 60-38-2, limonite 1/10, few specks marcasite	
100	105	Brown dolomite to buff dolomite, gray-brown & marcasite-speckled chert 85-15, limonite 1, trace marcasite	
105	110	Buff dolomite, brown-gray chert 97-3, dark buff clay & dark gray clay 1, limonite 3/10, trace marcasite (fine cuttings)	
110	120	Buffish-brown dolomite, brown-gray & marcasite-speckled chert 94-6, dark buff clay & dark gray clay 2, marcasite 1, limonite ½	
120	125	Buffish-brown dolomite, light gray chert 98-2, trace dark buff clay, marcasite 3/10, limonite 1/10	
125	130	Pale brown-gray dolomite, light gray & white chert 96-4, marcasite 1/10, limonite 1/10	
130	135	Brown dolomite, gray chert 99-1, little buff dolomitic ravellings, trace marcasite & limonite	
135	140	Brown dolomite, gray-brown & tan chert 92-8, marcasite 1/10, few specks limonite	
140	150	Pale brown dolomite, gray chert 96-4, marcasite 2	
150	160	Brown dolomite, tan & gray-brown chert 95-5, marcasite 3	
160	170	Brown dolomite, tan chert 99-1, few specks calcite marcasite 2	
170	175	Sample contaminated by buff dolomite caving from top of hole. Brown dolomite, gray-brown & tan chert 95-5, marcasite 1	
175	180	Brown dolomite, tan, brown & marcasite-speckled chert 93-7, marcasite 2	
180	185	Brown dolomite, tan & brown-gray chert 92-8, marcasite 4	
185	188	Brown dolomite, brown-gray chert 95-5, marcasite 3	
188	190	Brown dolomite, gray dolomite 75-25, marcasite 3	GRAY - 189.5
190	192½	Gray dolomite, some brown dolomitic ravellings marcasite 2	
192½	195	Gray dolomite, marcasite 1	
195	197½	Gray dolomite, marcasite 7/10	
197½	200	Brown-gray dolomite, marcasite ½	
200	202½	Brown-gray dolomite, few specks calcite, marcasite 7/10	
202½	205	Light gray dolomite with few dark specks, brown-gray dolomite 80-20, marcasite 6/10	BLUE - 203.0
205	207½	Gray dark-speckled dolomite, marcasite 4/10	
207½	210	Gray dark-speckled dolomite, marcasite 2/10	
210	212½	Brown fossiliferous limestone, gray dark-speckled dolomite 60-40, marcasite 2/10, blende 2/10	OILROCK - 211.0
212½	215	Brown fossiliferous limestone, some "Blue" ravellings, marcasite 2/10, trace blende	

Continued

Lafa[illegible]te County
~~Sec. Ref. 151~~

~~Serial No. 135~~
Hole No. 43 (Continued)
Collar Elevation: 982.22'
Depth of Hole: 226.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 8/20/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
215	217½	Light brown limestone, dark brown shaly limestone 95-5, marcasite 1/10, few specks blende	
217½	220	Green clay, light brown limestone 80-20, marcasite 1/10, blende 2/10, a speck phosphate	CLAY - 218
220	222½	Light gray clay, brown limestone, gray shaly limestone, trace green clay, marcasite ½, blende 2/10	GLASS - 222 (per driller)
222½	225	Gray dolomite limestone (coarse cuttings), dark brown limestone 80-20, chocolate brown shale 1, marcasite 2/10, trace blende	McGREGOR - 223
225	227	Gray dolomite limestone, some "Glassrock" ravellings, marcasite 3/10, trace blende	

Water table: 59'

Lafayette County
~~Sec. of. 151~~

~~Serial No. 136~~
Hole No. 44
Collar Elevation: 996.66'
Depth of Hole: 242.9' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/3/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff clay, gray dolomitic limestone 95-5, few specks of limonite, marcasite, few specks of blende	
10	20	Buff clay	
20	25	Buff clay, buff dolomite 80-20, trace of limonite, few specks dark buff and red chert	
25	30	Buff clay, light buff dolomite 70-30, trace of limonite	
30	35	Buff clay, light buff dolomite 75-25	
35	40	Buff dolomite, buff clay 80-20	
40	50	Buff dolomite, buff clay 85-15, trace of limonite	
50	60	Buff dolomite, buff clay 90-10	
60	65	Buff dolomite, buff clay 95-5, limonite 1	
65	70	Coarse cuts: Dark buff dolomite, limonite 4	
70	75	Buff dolomite, limonite 3	
75	80	Buff dolomite, limonite 25	
80	85	Buff dolomite, limonite 30	
85	90	Buff dolomite, limonite 90	
90	95	Buff dolomite (coarse cuts), limonite 40, marcasite 10	
95	100	Buff dolomite (coarse cuts), limonite 40, marcasite 25	
100	105	Dark buff dolomite, limonite 30, marcasite 20	
105	110	Dark buff dolomite, limonite 70, marcasite 5	DRAB - 112.5'
110	115	Dark buff dolomite, brown-buff chert 98-2, limonite 57, marcasite 3	
115	120	Coarse cuts: Dark brown-buff dolomite, buffish gray-brown chert 90-10, limonite 50, marcasite 10	
120	125	Coarse cuts: Dark buff dolomite, gray-brown dark buff and marcasite-speckled chert 92-8, limonite 65, marcasite 15, a speck of galena	
125	130	Dark buff dolomite, marcasite-speckled chert 95-5, limonite 20, marcasite 5	
130	140	Buff dolomite, brown-buff chert 93-7, limonite 19, marcasite 1	
140	150	Buff dolomite, buffish gray-brown chert, white chert and marcasite-speckled chert 92-8, limonite 17, marcasite 1	
150	160	Buff dolomite, brown-gray chert 93-7, limonite 25, marcasite 1/2	
160	170	Buff dolomite, light gray & tan chert 97-3, limonite 5, trace of marcasite	
170	175	Buff dolomite, brown and light gray clay, brown-gray chert 90-8-2, limonite 6, marcasite 1/2	
175	180	Buff dolomite, brown-gray & marcasite-speckled chert 94-6, limonite 8, marcasite 2, a speck of galena	
180	185	Buff dolomite, tan and light brown-gray chert 95-5, trace of gray clay, limonite 1/2, trace of marcasite	
185	195	Buff dolomite, light tan chert, buffish-brown chert 92-7-1, limonite 2/10, few specks of marcasite	
195	200	Coarse cuts: Buff dolomite, light tan chert 91-9, limonite 2/10, few specks of limonite	
200	205	Buff dolomite, light tan and light brown chert 90-10, trace of limonite	
205	210	Buff dolomite, light tan chert 96-4, dark gray clay 1, thin trace of marcasite and limonite	

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Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 136~~
Hole No. 44 (Continued)
Collar Elevation: 996.66'
Depth of Hole: 242.9' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/3/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
210	215	Buff and dark buff dolomite, tan and gray-brown chert 94-6, trace of dark gray clay	GRAY - 213'
215	220	Coarse cuts: Dark buff dolomite, few specks green clay, tan chert 1	
220	225	Dark buff coarse green dolomite, few specks green shale, little chert ravellings, trace of dark gray clay	
225	227½	Dark buff coarse green dolomite, few coarse cuts brown-gray dolomite, green shale 2, trace of dark gray clay, trace of marcasite	BLUE - 227'
227½	230	Dark buff coarse green dolomite, brown-gray dolomite 5, green shale 3, few specks of marcasite	
230	232½	Coarse cuts: Dark buff coarse green dolomite, dark gray dark-speckled dolomite, brown dolomitic limestone 50-30-20, trace of marcasite	OILROCK - 231.5'(?
232½	235	Dark buff coarse green dolomite, brown dolomitic limestone, dark gray dark-speckled dolomite, dark gray clay, dark brown shale 70-20-7-2-1, few specks of marcasite	
235	237½	Dark buff coarse green dolomite, brown dolomitic limestone, dark gray dark-speckled dolomite (all coarse cuts), trace of marcasite, a speck of green shale	CLAY - 237.5
237½	240	Dark buff dolomite, brown dolomitic limestone, green clay 85-10-5, few cuts dark gray dark-speckled dolomite, trace of green shale, marcasite 2/10, few specks of phosphate	GLASS - 238'
240	243	Ravelling from all overlying beds, Dark brown dolomite 95-5, marcasite 1/10	McGREGOR - NONE DETECTED

ESTIMATED AT 244' (?)

Water table: 73.5'

Depth From	Depth To	Remarks
0	127	8¼" hole
127	190	6½" hole
190	243	4 7/8" hole
92½	241½	Loose ground
241½	243	Hard ground

Very difficult drilling due to caving. Impossible to pick formation tops with any degree of accuracy. No McGregor detected. Indicated "tops" are simply guesses. - HWD

Set 127' of 6 5/8" pipe
Set 202' of 4 7/8" pipe

~~Serial No. 137~~
Hole No. 45
Collar Elevation: 977.68'
Depth of Hole: 218.7' (Measurement by steel tape)
Location: Francis M. Calvert

Lafayette County
~~Sec. [illegible] f. 151~~

Date completed: 9/9/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff clay	
10	35	Buff dolomite	
35	45	Buff dolomite, few specks of limonite	
45	55	Dark buff dolomite, limonite 1/2	
55	60	Dark buff dolomite, limonite 2/10	
60	65	Gray-buff marcasite-speckled dolomite, limonite and marcasite 15	
65	70	Gray marcasite-speckled dolomite, limonite & marcasite 20	
70	75	Light gray marcasite-speckled dolomite, marcasite and limonite 8	
75	80	Light gray dolomite (slightly marcasite-speckled), marcasite and limonite 2	
80	85	Light gray dolomite, light gray and white chert 97-3, limonite and marcasite 1	DRAB - 82.5'
85	90	Light gray dolomite, light gray and white chert 93-7, marcasite and limonite 2, few specks of blende	
90	95	Light gray dolomite, light gray and white chert 93-7, marcasite 2, trace of limonite	
95	100	Light cream dolomite, light gray and white chert 85-15, marcasite 1, trace of limonite	
100	110	Light gray dolomite, light gray and white chert 96-4, limonite 3, marcasite 2/10	
110	120	Light gray dolomite, light gray and white chert with slight marcasite-speckles 90-10, marcasite 4, limonite 1	
120	130	Light gray dolomite, light gray and white chert 92-8, marcasite 8 , limonite 1/2	
130	140	Light gray dolomite, light gray and white chert 93-7, marcasite 5, trace of limonite	
140	145	Light cream dolomite, white chert 95-5, marcasite 3 (small recovery)	
145	150	Brown dolomite, tan chert 94-6, marcasite 2	
150	160	Brown dolomite, tan chert 96-4, marcasite 3	
160	165	Brown dolomite, heavily marcasite-speckled chert 75-25, marcasite 22, trace of dark gray clay	
165	170	Brown dolomite, heavily marcasite-speckled chert 92-18, marcasite 35	
170	175	Brown dolomite, heavily marcasite-speckled chert 50-50, marcasite 30	
175	180	Brown dolomite, marcasite-speckled chert and brown chert 92-8, Marcasite 15	
180	185	Gray-brown marcasite-speckled dolomite, marcasite 20	
185	187½	Gray dolomite, marcasite 8	
187½	190	Gray dolomite, marcasite 7	
190	192½	Brown-gray dolomite, marcasite 4	
192½	195	Brown-gray dolomite, marcasite 8	
195	197½	Brown-gray dolomite, marcasite 10	
197½	200	Brown-gray dolomite, marcasite 5	
200	202½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, marcasite 6, gray clay 2	BLUE - 200.5'
202½	205	Gray dark-speckled dolomite, trace of gray clay, marcasite 8	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 137~~
Hole No. 45 (Continued)
Collar Elevation: 977.68'
Depth of Hole: 218.7' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/9/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
205	207½	Gray dark-speckled dolomite, brown shaly limestone 95-5, marcasite 8	OILROCK - 207.4'
207½	210	Brown shaly limestone and gray fossiliferous dolomitic limestone, light gray clay 80-20, marcasite 5, trace of blende	CLAY - 209.5'
210	212½	Green clay, gray-brown fossiliferous dolomitic limestone 60-40, marcasite 4, few specks of blende and galena	
212½	215	Dark brown dolomite, gray clay 80-20, marcasite 5, few specks of galena	GLASSROCK - 213.0'
215	217½	Brown and tan limestone, gray marcasite-speckled dolomitic limestone (coarse cuts) 90-10, marcasite 4, few specks blende	McGREGOR - 217.2'
217½	220	Gray marcasite-speckled dolomitic limestone, marcasite 2, a speck of galena	

Water table: 55'

Depth From	Depth To	Assays ZnS	FeS2	PbS
60	65	0.35	25.68	0.16
65	70	0.15	32.74	0.17
160	165	0.15	17.54	0.15
165	170	0.10	20.54	0.15
170	175	0.15	20.33	0.15
175	180	0.35	14.55	0.15
180	185	0.20	16.69	0.15
195	197½	0.15	9.84	0.17
207½	210	0.45	10.05	0.15
210	212½	0.30	10.70	0.15

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Lafayette County
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~~Serial No. 138~~
Hole No. 46
Collar Elevation: 973.14'
Depth of Hole: 207.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown and buff clay	
5	10	Buff clay, buff dolomite 90-10	
10	20	Dark buff dolomite, a speck of marcasite	
20	25	Buff dolomite, brown-buff clay 80-20, speck of limonite	
25	30	Buff dolomite, buff clay 75-25	
30	40	Dark buff dolomite, (coarse cuts)	
40	50	Dark buff dolomite (coarse cuts), a speck of limonite	
50	60	Dark buff dolomite (coarse cuts)	
60	65	Dark buff dolomite (coarse cuts), brown-buff dolomite 90-10, a speck of marcasite	
65	70	Buff dolomite, brown dolomite 50-50, marcasite 2, a speck of blende	
70	75	Brown-buff and buff dolomite, marcasite 2, a speck of blende	
75	80	Brown marcasite-speckled dolomite, brown chert 97-3, trace of buff dolomite, marcasite 4	DRAB - 78'
80	85	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 8, trace of blende	
85	90	Brown dolomite, gray marcasite-speckled chert 94-6, trace of tan chert, marcasite 6, blende 1/10	
90	95	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 10, blende 1/10	
95	100	Brown dolomite, gray marcasite-speckled chert 98-2, marcasite 7	
100	110	Brown dolomite, white dolomite, gray marcasite-speckled chert, gray-brown chert 85-7-6-2, marcasite 5	
110	120	Smoky light gray dolomite, white chert 94-6, marcasite 1½, a speck of blende	
120	125	Fine cuts: Gray dolomite, light gray and white chert 98-2, marcasite 8	
125	130	Brown dolomite, gray marcasite-speckled chert and gray-brown chert 95-5, marcasite 5	
130	135	Light brown dolomite, gray chert 99-1, marcasite 5	
135	140	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 10	
140	145	Brown dolomite, tan and marcasite-speckled chert 93-7, marcasite 16	
145	150	Brown dolomite, marcasite-speckled chert 94-6, marcasite 12	
150	155	Brown dolomite (some marcasite-speckled), trace of marcasite-speckled chert, marcasite 8	
155	160	Brown marcasite-speckled dolomite, gray marcasite-speckled chert 92-8, marcasite 35	
160	165	Brown dolomite, gray marcasite-speckled chert 85-15, marcasite 20	
165	170	Brown dolomite, marcasite-speckled chert and brown chert 80-20, marcasite 8	
170	175	Dark brown dolomite, gray marcasite-speckled chert 98-2, marcasite 5	
175	177½	Brown-gray dolomite (some marcasite-speckled) marcasite 6	GRAY - 175'
177½	180	Gray dolomite, marcasite 5	
180	182½	Gray dolomite, marcasite 4	
182½	185	Gray-brown dolomite, marcasite 3	
185	187½	Gray-brown marcasite-speckled dolomite, marcasite 10	

Continued

Lafayette County
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~~Serial No. 138~~
Hole No. 46 (Continued)
Collar Elevation: 973.14'
Depth of Hole: 207.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
187½	190	Gray-brown marcasite-speckled dolomite, gray clay 1, marcasite 17	
190	192½	Gray dark speckled marcasite-speckled dolomite, marcasite 15	BLUE - 190'
192½	195	Gray dark speckled marcasite-speckled dolomite, marcasite 14	
195	197½	Dark gray dark speckled marcasite-speckled dolomite, brown dolomitic limestone 90-10, marcasite 5, a speck of galena	OILROCK - 197.2'
197½	200	Brown fossiliferous dolomitic limestone and dark brown shaly limestone, marcasite 5, few specks of galena, speck of blende	
200	202½	Dark brown dolomitic limestone, gray clay 80-20, marcasite 2, few specks of galena, a speck of blende	CLAY - 200'
202½	205	Dark brown and tan limestone, chocolate brown shale 99-1, marcasite 2, few specks of galena, a speck of blende	GLASS - 200.5'
205	207	Gray dolomitic limestone, marcasite 2	McGREGOR - 205'

Water table: 50'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
90	95	0.05	9.41	0.15
135	140	0.10	7.70	0.13
140	145	0.20	68.48	0.15
145	150	0.10	6.20	0.15
150	155	0.20	6.42	0.15
155	160	0.05	21.40	0.15
160	165	0.20	12.62	0.15
185	187½	0.15	11.12	0.13
187½	190	0.10	18.83	0.13
190	192½	0.10	15.19	0.13
192½	195	0.10	15.40	0.20

Lafayette County
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~~Serial No. 139~~
Hole No. 47
Collar Elevation: 964.77'
Depth of Hole: 202.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/16/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Buff clay	
10	15	Buff clay, coarse dark buff chert and buff dolomite, 90-5-5, trace of limonite	
15	45	Buff dolomite	
45	60	Buff dolomite, few specks calcite and marcasite	
60	65	Brown dolomite, brown chert 99-1, trace of marcasite	DRAB - 63'
65	70	Brown dolomite, gray and brown marcasite-speckled and tan chert 92-8, marcasite 7/10	
70	80	Brown dolomite, tan and brown-gray chert 94-6, marcasite 3	
80	90	Gray-brown dolomite, brown-gray chert 96-4, marcasite 8/10	
90	100	Light gray dolomite, white chert 95-5, trace of pale green clay, marcasite 3/10	
100	110	Brown-gray dolomite, gray and light tan chert 93-7, marcasite 1	
110	120	Gray-brown dolomite, tan chert 98-2, marcasite 4/10	
120	130	Light brown dolomite, tan chert 96-4, marcasite 2/10	
130	135	Brown dolomite, few specks tan chert, marcasite 1/10	
135	140	Dark brown marcasite-speckled dolomite, marcasite 10	
140	145	Dark brown dolomite, gray marcasite-speckled chert 93-7, marcasite 9	
145	150	Dark brown dolomite, gray marcasite-speckled chert 92-8, marcasite 8	
150	155	Dark brown dolomite, gray marcasite-speckled chert 91-9, marcasite 10	
155	160	Dark brown dolomite, gray marcasite-speckled chert 97-3, marcasite 12	
160	165	Brown-gray marcasite-speckled dolomite, marcasite 3, a speck of calcite	GRAY - 160'
165	167½	Brown-gray marcasite-speckled dolomite, marcasite 3	
167½	170	Gray-brown marcasite-speckled dolomite, marcasite 9	
170	172½	Gray-brown marcasite-speckled dolomite, marcasite 10	
172½	175	Brown-gray marcasite-speckled dolomite, marcasite 18	
175	177½	Gray dark-speckled dolomite, gray-brown dolomite 95-5, gray clay 3, marcasite 17	BLUE - 175'
177½	180	Gray dark-speckled marcasite-speckled dolomite, marcasite 10	
180	182½	Small recovery: Gray dark-speckled marcasite-speckled dolomite, marcasite 20	
182½	185	Brown dolomite, gray dark-speckled marcasite-speckled dolomite 70-30	OILROCK - 183.2'
185	187½	Brown fossiliferous dolomitic limestone, brown shale 99-1, marcasite 30	
187½	190	Brown fossiliferous dolomitic limestone, brown shaly limestone, trace of brown clay, marcasite 12	
190	192½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 10, a speck of blende, a speck of phosphate	CLAYBED - 192'
192½	195	Gray clay (Bentonite)	
195	197½	Dark brown dolomite, gray clay 60-40, marcasite 5	GLASS - 196'

Continued

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~~Serial No. 139~~
Hole No. 47 (Continued)
Collar Elevation: 964.77'
Depth of Hole: 202.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/16/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
197½	200	Gray dolomitic limestone and gray clay, dark brown dolomite 95-5, marcasite 2 — McGREGOR - 197.6'
200	202	Coarse cuts: Gray marcasite-speckled dolomitic limestone, trace of calcite, marcasite 8

Water table: 43'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
155	160	Nil	7.06	0.12
170	172½	0.05	10.05	0.12
172½	175	Nil	13.48	0.12
175	177½	0.05	7.27	0.12
177½	180	0.10	11.77	0.12
180	182½	0.10	16.26	0.12
182½	185	0.15	19.90	0.12
185	187½	0.10	20.33	0.13
187½	190	0.15	11.12	0.12

Lafayette County
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~~Serial No. 140~~
Hole No. 48
Collar Elevation: 968.77'
Depth of Hole: 214.8' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/22/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	25	Buff clay and soft buff dolomite boulders	
25	50	Buff dolomite, trace of limonite	
50	55	Buff dolomite, dark brown-gray cave clay 60-40	
55	60	Buff dolomite, trace of dark brown-gray cave clay	
60	70	Coarse cuts: Buff dolomite, brown-gray clay 2	
70	80	Buff dolomite, trace of brown-gray clay	
80	85	Buff dolomite, light gray-brown clay 1	
85	90	Coarse cuts: Brown-buff dolomite, brown and gray-brown chert 98-2	DRAB - 87.5'
90	95	Buff and brown-buff dolomite, trace of buff clay, brown and gray-brown chert 1	
95	100	Brown and buff dolomite, gray and brown chert 95-5, thin trace of marcasite	
100	110	Buff dolomite, dark buff glassy chert 90-10, gray clay 1, marcasite 2/10	
110	120	Brown-buff dolomite, brown-gray chert and dark buff chert 91-6-3, trace of marcasite	
120	130	Coarse cuts: Buff dolomite, dark buff glassy chert and gray and white chert 88-12, few specks of marcasite	
130	140	Buff dolomite, dark buff glassy chert and brown and gray chert 90-10	
140	150	Buff dolomite, tan chert and dark buff glassy chert 90-10, few specks of marcasite	
150	155	No recovery	
155	160	Some extra coarse cuts: Dark buff dolomite, tan chert 97-3	
160	170	No recoveries	
170	175	Gray-brown and buff dolomite, tan and brown-gray (coarse) 85-15, specks of marcasite	
175	180	Coarse cuts: Pale brown dolomite, gray chert (extra coarse) and tan chert 92-8, traces of marcasite, a speck of blende, gray coarse-grained dolomite 10	GRAY - 179.5'
180	185	Coarse cuts: Gray coarse-grained dolomite, brown-gray chert ravelling 8, trace of dark gray clay, marcasite 2, few specks of galena	
185	190	Coarse cuts: Gray coarse-grained dolomite, considerable ravelling of buff dolomite and brown-gray chert, marcasite 7/10, few specks of galena	
190	192½	Brown-gray coarse-grained dolomite, dark gray clay 80-20, some ravellings of buff dolomite and brown-gray chert, marcasite 1/2, few specks of galena	
192½	195	Mostly ravelling from buff and cherty sections above, little brown-gray coarse-grained dolomite, marcasite 7/10, few specks of galena	
195	197	No recovery: Set small casing	BLUE - 195' (?)
197	202	Dark gray dark-speckled dolomite, trace of green shale, marcasite 2/10, few specks of brown shale, few fossiliferous cuttings	
202	205	Brown shale and fossils, gray dark-speckled dolomite, ravelling 80%, marcasite 3/10	OILROCK - 202'

Continued

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~~Serial No. 140~~
Hole No. 48 (Continued)
Collar Elevation: 968.77'
Depth of Hole: 214.8' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 9/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
205	207½	Ravelling gray dolomite, green shale, brown shale and fossils, 95-3-2-, marcasite 2/10
207½	210	Ravelling gray dolomite, dark brown dolomitic limestone 95-5, trace of green shale, marcasite 2/10 — GLASS - 207.5' (?)
210	212½	Very small recovery: Gray limestone and dolomitic limestone, brown limestone and dolomitic limestone 90-10, marcasite 2/10 — McGREGOR - 210.3'
212½	215	Gray dolomitic limestone, trace of marcasite

Water table: 46'

Depth From	Depth To	Remarks
95	210	Loose ground
	210	Hard
150	155	Strong water
160	170	Strong water

~~Serial No. 165~~
Hole No. 49
Collar Elevation: 975.1'
Depth of Hole: 226.0' (Measurement by steel tape)
Location: Francis M. Calvert

Lafayette County
~~Sec. Ref. 151~~

Date completed: 1/16/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Dark buff clay	
10	15	Buff dolomite, buff clay 70-30	
15	25	Dark buff-brown clay	
25	30	Buff dolomite, limonite 1, few specks of marcasite	
30	40	Buff dolomite (rather coarse cuts), limonite 2/10	
40	45	Buff dolomite, limonite 3/10	
45	50	Dark buff dolomite, limonite 1, few specks of galena	
50	55	Dark buff dolomite, limonite 3, few specks of galena	
55	60	Very coarse cuts: Dark buff dolomite, limonite 7, trace of galena	
60	70	Buff dolomite to brown-buff dolomite, limonite 8, marcasite 1, few specks of galena	
70	75	Buffish-brown dolomite, limonite-clay 4, limonite and marcasite 10, specks of galena	
75	80	Buff dolomite, limonite/clay 10, limonite and marcasite 15, a speck of galena	
80	85	Brown marcasite-speckled dolomite, limonite/clay 2, marcasite & limonite 20, specks of galena	
85	90	Brown dolomite, (some marcasite-speckled), marcasite & limonite 6, a speck of calcite	
90	95	Buffish-brown dolomite, brown chert 98-2, marcasite & limonite 5	DRAB -92.5
95	100	Buffish-brown dolomite, gray and marcasite-speckled chert 90-10, marcasite & limonite 8	
100	105	Buffish-brown dolomite, gray marcasite-speckled and brown chert 96-4, marcasite & limonite 5	
105	110	Buffish-brown dolomite, gray and marcasite-speckled chert 93-7, limonite/clay 1, marcasite & limonite 3	
110	120	Brown dolomite, gray & light brown-gray chert 92-8, marcasite 4	
120	130	Pale brown-gray dolomite, light gray and white chert 94-6, marcasite 7/10	
130	140	Gray-brown dolomite, gray chert 91-9, marcasite 1	
140	150	Gray-brown dolomite, gray & tan chert 93-7, marcasite 1	
150	160	Brown dolomite, tan chert 95-5, marcasite 6/10	
160	165	Brown dolomite, light gray & tan chert 99-1, marcasite 7/10	
165	170	No Recovery	
170	180	Brown dolomite, tan & gray-brown chert 82-18, marcasite 2½	
180	185	Brown dolomite, tan & gray-brown chert 97-3, marcasite 2½	
185	190	Brown dolomite, gray dolomite 95-5, marcasite 1/2	GRAY - 189.7
190	195	Gray dolomite, marcasite 4/10	
195	200	Brown-gray dolomite, marcasite ½	
200	202½	Gray dark-speckled dolomitic limestone, brown-gray dolomite 60-40, marcasite 2/10	BLUE - 201.0
202½	205	Dark gray dark-speckled dolomite, marcasite 3/10	
205	207½	Gray dark speckled dolomite, dark brown dolomite 60-40, marcasite 2/10	OILROCK - 206.5
207½	210	Brown fossiliferous limestone and dark brown shale, marcasite 2/10	
210	212½	Brown fossiliferous limestone and brown-gray dark speckled limestone, trace of green shale and light gray clay, marcasite 1/10, a speck of blende and galena	
212½	215	Brown limestone, green shale and dark gray fossiliferous limestone 70-30, marcasite 3/10, a speck of phosphate	CLAY - 212.5 GLASS - 213.2

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 165~~
Hole No. 49 (Continued)
Collar Elevation: 975.1'
Depth of Hole: 226.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/16/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
215	217½	Dark brown sugary dolomite, chocolate brown shale 99-1, marcasite 1/10
217½	220	Dark brown limestone and tan limestone, chocolate brown shale 99-1, marcasite 2/10
220	222½	Gray dolomitic limestone, dark brown limestone 90-10, marcasite 1/10 — McGREGOR - 220.3
222½	225	Gray dolomitic limestone, marcasite 1/10

Water table: 54'

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Sec. Ref. 151

Serial No. 166
Hole No. 50
Collar Elevation: 926.06'
Depth of Hole: 166.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/20/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	7	Black soil
7	15	Coarse cuts: Buff dolomite, gray shale 95-5
15	20	Brown-buff dolomite and buff dolomite, few specks buff & red residual chert
20	25	Buffish-brown dolomite, dark buff & red chert 95-5, trace marcasite
25	30	Fine cuts: Buff dolomite, marcasite 1/2
30	35	Brown dolomite, dark buff chert and red chert (raveling) 92-8, marcasite 3/10
35	40	Brown dolomite, gray-brown chert 98-2, some buff chert raveling — DRAB - 37.5
40	45	Brown dolomite, marcasite speckled chert 85-15, marcasite 3, blende 1/10, a speck of galena
45	50	Brown dolomite, gray marcasite-speckled chert 88-12, brown chert 1, marcasite 7, blende 1/2
50	55	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 4, blende 2/10
55	60	Brown dolomite, few specks gray-brown chert, marcasite 1, blende 1
60	65	Brown dolomite, brown-gray & marcasite-speckled chert 80-20, marcasite 8, blende 1
65	70	Brown dolomite, gray chert 92-8, marcasite 10, blende 1
70	75	Light gray dolomite, light gray and white chert 92-8, marcasite 2, blende 4/10
75	80	Gray-brown dolomite, light gray chert 98-2, marcasite 7, blende 4/
80	85	Brown dolomite, gray chert and marcasite-speckled chert 90-10, marcasite 12, blende 6/10
85	90	Gray-brown dolomite, gray chert and marcasite-speckled chert 97-3, marcasite 15, blende 1/2

Continued

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 166~~
Hole No. 50 (Continued)
Collar Elevation: 926.06'
Depth of Hole: 166.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/20/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
90	95	Brown dolomite, gray marcasite-speckled & tan chert 88-12, marcasite 18, blende 3/10
95	100	Brown dolomite, tan chert 94-6, marcasite 8, blende 1/10
100	105	Brown dolomite, tan & gray chert 95-5, marcasite 20, blende 2
105	110	No recovery
110	115	Dark brown marcasite-speckled dolomite, marcasite 25, few specks of blende
115	120	Brown dolomite, gray marcasite-speckled chert 75-25, some dark buff chert raveling, marcasite 15, few specks of blende
120	125	Brown dolomite, gray marcasite-speckled chert 92-8, marcasite 18, a speck of blende
125	130	Gray dolomite, brown dolomite 95-5, marcasite 6, a speck of blende — GRAY - 125.3
130	132½	Gray dolomite, marcasite 4, few specks of blende
132½	135	Coarse cuts: Brown-gray marcasite speckled dolomite, marcasite 5, blende 3/10
135	137½	Gray and brown-gray dolomite, marcasite 7, blende 2
137½	140	No recovery
140	142½	Gray-brown dolomite, marcasite 16, blende 1
142½	145	Gray-brown dolomite, trace of dark gray clay, marcasite 20, blende
145	147½	Very small sample: Gray dolomite, gray dark speckled dolomite 80-20, marcasite 10, blende 10 — BLUE - 147 (?)
147½	150	Gray dark speckled dolomite, trace of dark gray clay, marcasite 50, blende 12
150	152½	Gray dark speckled dolomite, gray clay 95-5, marcasite 25, blende 4
152½	155	Brown fossiliferous dolomitic limestone, marcasite 15, blende 3 — OILROCK - 152.5
155	157½	Brown fossiliferous dolomitic limestone, dark brown shale 80-20, marcasite 10, blende 2
157½	160	Green clay, brown fossiliferous dolomitic limestone 80-20, marcasite 7, blende 1, trace of phosphate — CLAYBED - 158
160	162½	Brown dolomite, green clay and bentonite 80-20, marcasite 10, blende 1 — GLASS (per driller) - 162
162½	165	Light gray dolomitic limestone, dark brown dolomite 80-20, marcasite 7, blende 1 — McGREGOR - 163

Water table: 4½'

Remarks

There seems to be an excess thickness of "Gray" and the "Blue" is rather thin.

Driller reports 'Broken Ground' at 80 to 150 feet and mostly small recoveries.

Oil Rock and Glass Rock were 'Soft'

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 166~~
Hole No. 50 (Continued)
Collar Elevation: 926.06'
Depth of Hole: 166.3' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/20/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	ZnS	Assays FeS_2	PbS
60	65	0.10	8.13	Trace
65	70	0.35	5.13	Trace
80	85	0.25	7.06	Trace
100	105	0.60	9.63	Trace
110	115	0.10	15.40	Trace
135	137½	7.00	12.19	Trace
140	142½	1.00	13.91	Trace
142½	145	9.55	14.55	Trace
145	147½	8.05	11.77	Trace
147½	150	4.05	36.80	Trace
150	152½	0.95	18.60	Trace
152½	155	0.85	16.90	Trace
155	157½	0.25	11.34	Trace

Lafayette County
Sec. Ref. 151

Serial No. 167
Hole No. 51
Collar Elevation: 950.07'
Depth of Hole: 198.6' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/23/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	3½	Brown and Buff clay
3½	10	Coarse cuts: Buff dolomite, trace of limonite
10	20	Coarse cuts: Buff dolomite, trace of limonite
20	30	Rather dark buff dolomite trace of limonite
30	35	Buff dolomite trace of brown-buff dolomite, limonite and marcasite 2, a speck of blende
35	40	Buff dolomite, trace of brown-buff dolomite, marcasite and limonite 7, blende 3/10
40	45	Fairly coarse cuts: Gray-brown dolomite, buff dolomite 95-5, marcasite 1, few specks of blende
45	50	Brown marcasite-speckled dolomite, marcasite 12, blende 2/10
50	55	Buffish-brown dolomite, marcasite 3, blende 1/10
55	60	Buffish-brown dolomite, marcasite 2, trace of blende
60	65	Brown dolomite, few specks calcite, marcasite 6/10, few specks blende
65	70	Buffish brown dolomite, gray chert 94-6, marcasite 1, blende ½ DRAB - 67.5
70	75	Buffish brown dolomite, gray chert 92-8, marcasite 10, blende 1 (?)
75	80	Brown dolomite, gray-brown chert 93-7, marcasite 8, blende 6/10
80	85	Brown dolomite, gray chert 99-1, marcasite 3, blende 8/10
85	90	Pale brown dolomite, light gray and tan chert 90-10, marcasite 10, blende 2
90	95	Pale brown-gray dolomite, light gray chert 99-1, marcasite 5, blende
95	100	Light gray dolomite, light gray chert 90-10, marcasite ½, blende 6/10
100	105	Pale gray-brown dolomite, light tan chert 95-5, marcasite 2, blende 4/10

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 167~~
Hole No. 51 (Continued)
Collar Elevation: 950.07'
Depth of Hole: 198.6' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/23/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
105	110	Brown dolomite, gray chert 97-3, marcasite 1, blende 1/10	
110	115	Brown dolomite, gray & gray-brown chert 80-20, marcasite 12, blende	
115	120	Brown dolomite, few specks gray chert, marcasite 1, blende 2/10	
120	125	Brown dolomite, tan & gray chert 92-8, marcasite 2, blende 1/10	
125	130	Brown dolomite, tan chert 99-1, marcasite 2, blende 1/10	
130	135	Brown dolomite, tan chert 94-6, trace of pale green shale, marcasite 2½, trace of blende	
135	140	Dark brown marcasite-speckled dolomite, few specks chert, marcasite	
140	145	Buffish-brown dolomite, tan chert 98-2, marcasite 4, specks of blende	
145	150	Rather coarse cuts: Dark brown dolomite, light brown chert 92-8, marcasite 1	
150	155	Rather coarse cuts: Dark brown dolomite, brown chert 93-7, marcasite 7/10	
155	160	Brown dolomite, tan chert 98-2, marcasite 10	
160	165	Fairly coarse cuts of rather dark brown dolomite, marcasite 7	
165	170	Gray dolomite, brown dolomite 90-10, marcasite 5	GRAY - 165.5
170	172½	Gray dolomite, marcasite 2	
172½	175	Coarse cuts: Brown-gray dolomite, marcasite ½, few coarse specks of blende	
175	177½	Fine cuts: Gray dolomite, marcasite 4	
177½	180	Fine cuts: Brown-gray dolomite, gray clay 80-20, marcasite 3	BLUE- 179.5
180	182½	Dark brown-gray dark speckled dolomite, trace of gray clay, marcasite 1½	
182½	185	Brown fossiliferous dolomitic limestone, gray dark speckled dolomite 60-40, marcasite 1	OILROCK - 183.5
185	187½	Dark brown fossiliferous dolomitic limestone, marcasite 3	
187½	190	Green clay, brown fossiliferous dolomitic limestone 80-20, marcasite 1	CLAYBED - 188
190	192½	Coarse cuts: Dark brown sugary dolomite, chocolate brown shale 80-20, marcasite 1/2	GLASSROCK- 190
192½	195	Gray dolomitic limestone, dark brown dolomite 97-3, marcasite 2	McGREGOR - 192.5
195	197½	Brown-gray dolomitic limestone (some coarse cuts), marcasite 1½	

Water table: 29' (Adjust down 1 ft.)

Depth From	Depth To	Remarks
		Driller's Remarks:
70	95	Lost most of cuttings
125	170	Broken ground
177½	190	Soft ground

Depth From	Depth To	Assays ZnS	FeS2	PbS
45	50	0.40	6.42	Trace
70	75	1.30	4.49	Trace
75	80	0.75	6.42	Trace
80	85	1.25	6.20	Trace
85	90	2.20	9.84	Trace
90	95	4.20	4.28	Trace
110	115	0.60	10.48	Trace

1979

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 168~~
Hole No. 52
Collar Elevation: 986.85'
Depth of Hole: 231.5' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 1/27/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	11	Brown-buff clay	
11	15	Buff dolomite, gray dolomite 95-5, specks of marcasite	
15	20	Coarse cuts: Buff dolomite, specks of gray dolomite, speck of marcasite	
20	25	Buff dolomite, buff clay 90-10	
25	50	Buff dolomite	
50	80	Buff dolomite (rather dark)	
80	90	Dark buff calcareous dolomite	
90	95	Dark buff to brown-buff dolomite, few specks limonite	
95	100	Buff dolomite, light gray dolomite 60-40, trace of buff clay, trace of marcasite	
100	105	Light gray dolomite, light gray chert and white chert 92-8, marcasite 4	DRAB - 100
105	110	Light brown-gray dolomite, light gray chert & white chert 96-4, marcasite 2	
110	120	Light brown-gray dolomite, light gray chert & white chert 93-7, marcasite 1½	
120	130	Gray dolomite, gray & white chert 98-2, marcasite ½	
130	140	Light brown-gray dolomite, light gray & white chert 91-9, marcasite 2/10	
140	150	Light brown-gray dolomite, gray & brown-gray chert 92-8, marcasite 1	
150	155	Light brown-gray dolomite, light gray chert 96-4, marcasite 1	
155	160	Brown dolomite, tan chert 95-5, few specks marcasite-speckled chert, marcasite 4/10	
160	165	Brown dolomite, tan chert 96-4, trace of marcasite	
165	170	Brown dolomite, tan chert 85-15, marcasite 3/10	
170	180	Brown dolomite, tan chert 99-1, marcasite 2	
180	190	Brown dolomite, tan & marcasite-speckled chert 90-10, marcasite 10	
190	195	Brown dolomite, brown, tan & marcasite speckled chert 95-5, marcasite 6	
195	200	Dark brown dolomite, trace of chert, marcasite 8	
200	205	Gray dolomite, marcasite 1	GRAY - 200
205	207½	Gray dolomite, marcasite 1	
207½	210	Gray-brown dolomite, marcasite 3/10	
210	212½	Gray-brown dolomite, marcasite 1	
212½	215	Gray-brown dolomite, gray clay 80-20, few specks gray dark-speckled dolomite, marcasite 1	
215	217½	Gray dark-speckled dolomite, marcasite 6/10	
217½	220	Gray dark-speckled dolomite, gray clay 60-40, marcasite 8/10	
220	222½	Dark brown fossiliferous dolomitic limestone, marcasite ½, few specks of blende	OILROCK - 220.0
222½	225	Dark brown fossiliferous dolomitic limestone, green clay 95-5, marcasite 3/10, trace of blende	CLAYBED - 224.9
225	227½	Gray clay, dark brown dolomite (coarse cuts) 80-20, marcasite 2/10, few specks of blende	GLASSROCK- 227.0
227½	230	Coarse cuts: Gray dolomitic limestone, dark brown dolomite and chocolate brown shale 60-40, marcasite 2/10, a speck of blende	McGREGOR - 228.5

Water table: 67' (Adjust down 1½ ft.)

Depth From	Depth To	Remarks
		Driller's Remarks:
185	200	Broken ground and lost some cuttings. Soft bottom

1489

~~Serial No. 169~~
Hole No. 53
Collar Elevation: 965.01'
Depth of Hole: 210.0' (Measurement by steel tape)
Location: Francis M. Calvert

Lafayette County
~~See. Ref. 151~~

Date completed: 2/1/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	8	Soil	
8	10	Buff dolomite	
10	25	Coarse cuts: Buff dolomite	
25	35	Buff dolomite (rather dark)	
35	45	Buff dolomite	
45	55	Dark buff and buff dolomite, a speck of marcasite	
55	60	Dark buff dolomite, speck of marcasite	
60	65	Brown dolomite, buff dolomite 70-30, thin trace of marcasite	
65	70	Brown dolomite, buff dolomite 97-3, speck of calcite, marcasite 1	
70	75	Brown dolomite, buff dolomite 99-1, trace of calcite, marcasite 1/10	
75	80	Brown dolomite, gray chert 95-5, trace of brown chert, marcasite	DRAB - 77
80	85	Brown dolomite, gray-brown and tan chert 92-8, marcasite 2	
85	90	Brown dolomite, gray, brown, tan and marcasite-speckled chert 90-10, marcasite 1	
90	100	Brown dolomite, gray and marcasite speckled chert 93-7, marcasite	
100	110	Brown dolomite, light gray and white chert 93-7, marcasite 2	
110	120	Pale brown dolomite, light gray chert 96-4, marcasite 1	
120	130	Gray-brown dolomite, gray chert 93-7, marcasite 4/10	
130	140	Brown dolomite, tan and gray-brown chert 97-3, marcasite 2	
140	150	Brown dolomite, gray chert 99-1, marcasite 3	
150	155	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 7	
155	160	Brown dolomite, gray marcasite speckled chert 94-6, marcasite 12, a speck of blende	
160	165	Brown dolomite, gray and light brown chert 93-7, marcasite 2	
165	177½	No recovery	
177½	180	Brown dolomite (medium cuts), gray dolomite (coarse cuts) 80-20, trace of dark gray cave clay, trace light gray clay, marcasite 9, blende 1/10	GRAY - 179.5
180	182½	Very small recovery: Gray dolomite, considerable brown dolomite and chert ravelling, dark gray clay 2, marcasite 15, blende 1	
182½	185	No recovery	
185	187½	Gray dolomite, trace of dark gray clay, marcasite 20, blende 3	
187½	190	Very small recovery: Brown-gray dolomite, some brown dolomite & chert ravelings, marcasite 15, blende 2	
190	192½	Gray dolomite, marcasite 7, blende 4/10	BLUE - 192.5
192½	195	Light gray dolomite with few dark specks, trace of gray clay, marcasite 10, blende 3/10	
195	197½	Light gray dolomite with few dark specks, gray clay 1, marcasite 18, blende 1	
197½	200	Gray dark speckled dolomite, brown dolomite and fossiliferous dolomite, 95-5, marcasite 15, blende 1/2	OILROCK - 199.9
200	202½	Brown fossiliferous dolomite and brown clay, marcasite 6, blende 2/10, a speck of galena	
202½	205	Brown fossiliferous dolomite, green clay 60-40, marcasite 4, blende 1/10, a speck of galena, trace of phosphate	CLAY - 204
205	207½	Bentonite, dark brown dolomite and chocolate brown shale, gray dolomitic limestone 97-2-1, marcasite 2/10, a speck of blende and galena	GLASSROCK- 207.4
207½	210	Gray dolomitic limestone, trace of chocolate brown shale, marcasite 1, blende 2/10, a speck of galena	McGREGOR - 207.5

Water table

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 169~~
Hole No. 53 (Continued)
Collar Elevation: 965.01'
Depth of Hole: 210.0' (Measurement by steel tape)
Location: Francis M. Calvert

Date completed: 2/1/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Remarks
		Driller's Remarks:
155	192½	Broken ground
		Soft bottom

Depth From	Depth To	Assays ZnS	FeS	PbS
155	160	0.05	9.85	Trace
185	187½	1.45	12.19	Trace
187½	190	0.65	10.05	Trace
190	192½	0.25	5.56	Trace
192½	195	0.30	11.98	Trace
195	197½	0.25	19.47	Trace
197½	200	0.15	19.26	Trace

Lafayette County
~~Sec. [illegible], 151~~

~~Serial No. 84~~
Hole No. 1
Collar Elevation: 939.54'
Depth of Hole: 163.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 8/7/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown soil	
5	10	Buff clay & dolomite	
10	20	Buff dolomite	
20	25	Buff dolomite, tan chert 99-1	DRAB - 23
25	30	Buff dolomite, tan chert 97-3	
30	40	Brown-buff dolomite, brown & tan chert 96-4	
40	50	Brown-buff dolomite, gray & brown chert 97-3, thin trace marcasite	
50	60	Pale brown dolomite, light tan chert 95-5, thin trace marcasite	
60	70	Brown dolomite, thin trace marcasite	
70	75	Brown dolomite, brown & light brown clay 20, thin trace marcasite	
75	80	Brown dolomite, trace tan chert, few specks marcasite	
80	85	Small recovery, brown dolomite, gray chert 90-10, marcasite 1/10	
85	95	Brown dolomite, trace brown chert, trace marcasite	
95	100	Very small recovery, brown dolomite, marcasite ½	
100	105	Small recovery, brown dolomite, tan chert 99-1, marcasite 4	
105	110	Brown dolomite, gray chert 98-2, marcasite 1½	
110	115	Brown dolomite, brown & gray chert 99-1, marcasite ½	
115	120	Brown dolomite, trace brown chert, marcasite 1	
120	125	Brown dolomite, specks gray dolomite, marcasite 1½	
125	130	Very small recovery, gray dolomite, marcasite 1½	GRAY-125
130	135	Brown dolomite, marcasite 2	
135	140	Gray dark-speckled dolomite, marcasite 2	BLUE-135
140	142½	Gray dark-speckled dolomite, brown dolomite 80-20, marcasite 1½	
142½	145	Brown dolomite limestone, gray dark-speckled dolomite 80-20, marcasite 1	OIL -143
145	147½	Brown & tan dolomite limestone, brown shale 20, marcasite 1½ few specks blende & galena	
147½	150	Gray-brown fossiliferous dolomite limestone, gray clay 80-20, marcasite ½	CLAY-149½
150	152½	Gray clay & green shale, trace phosphate, dark brown fossiliferous limestone 10, marcasite ½	
152½	155	Light brown dolomite limestone, marcasite ½	GLASS-152½
155	157½	Light brown dolomite limestone, marcasite 1/10	
157½	160	Gray dolomite limestone, light brown dolomite limestone 60-40, marcasite 1/10	McGREGOR-158½
160	162½	Gray dolomite limestone, pale green shale 20, marcasite 1/10	

Water table: 27'

- -

Lafayette County

~~Sec. R[illegible] 151~~

~~Serial No. 85~~
Hole No. 2
Collar Elevation: 931.43'
Depth of Hole: 167.7' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 8/12/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlman
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil, clay & buff dolomite	
5	10	Coarse cuttings buff dolomite, limonite 2	
10	20	Buff dolomite, limonite 1/10	
20	25	Buff dolomite, few specks tan chert, trace limonite	
25	30	Buff dolomite, brown & tan chert 94-6, limonite ½	DRAB - 24
30	40	Buff dolomite, brown & tan chert 83-17, limonite 2½	
40	50	Buff dolomite, brown & tan chert 96-4, limonite 1/10	
50	60	Buff dolomite, tan chert 99-1, limonite 1	
60	70	Pale buff dolomite, brown & light tan chert 93-7, limonite 3	
70	80	Pale tan dolomite, pale tan & gray chert 96-4, limonite 2	
80	90	Pale tan dolomite, pale tan & gray chert 90-10, limonite 2, few specks marcasite	
90	100	White dolomite, white chert 97-3, limonite 3, few specks marcasite	
100	110	White & light brown dolomite, white & tan chert 96-4, limonite 2, trace marcasite	
110	115	Brown dolomite, brown & gray chert 94-6, marcasite & limonite ½	
115	120	Brown & light brown dolomite, marcasite & limonite 1	
120	122½	Gray & light brown dolomite, limonite 3, trace marcasite	GRAY-120
122½	125	Gray & light brown dolomite, limonite 2½, trace marcasite	
125	127½	Gray & light brown dolomite, limonite 2½, trace marcasite	
127½	130	Gray & light brown dolomite, limonite 1, trace marcasite	
130	132½	Gray dark-speckled dolomite, gray dolomite 60-40, trace marcasite limonite 1/10	BLUE -131
132½	137½	Gray dark-speckled dolomite, trace marcasite	
137½	140	Brown & tan fossiliferous dolomite limestone, gray dark-speckled dolomite 80-20, trace marcasite	OIL - 138
140	142½	Brown & tan fossiliferous limestone, trace marcasite, limonite 1/10	
142½	145	Brown & tan fossiliferous limestone, trace marcasite, limonite 1/10	
145	147½	Brown & tan limestone, trace marcasite	
147½	150	Brown & tan limestone, dark brown shale 10, trace marcasite	
150	152½	Green shale & gray clay & black shale 10, trace marcasite Brown limestone 80-20, few specks marcasite	CLAY - 150½
152½	155	Gray clay, trace brown limestone, green shale & black limestone, few specks marcasite	GLASS -155
155	157½	Light brown dolomite limestone, few specks marcasite	
157½	160	Light brown dolomitic limestone, trace green shale & brown clay, few specks marcasite	
160	162½	Light brown to dark brown dolomitic limestone, dark brown shale 5, green shale 1, few specks marcasite	
162½	165	Gray dolomitic limestone, gray-brown shale 15, green shale 5, brown shale 9, few specks marcasite	McGREGOR -162½
165	167½	Gray dolomitic limestone, gray-brown shale 5, green shale 6, brown shale 1, few specks marcasite	

Water table: 29'

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Lafayette County

~~Sec. R~~ ~~151~~

~~Serial No. 86~~

Hole No. 3

Collar Elevation: 949.35'

Depth of Hole: 183.5' (Measurement by steel tape)

Location: Clarence P. Ralph

Date completed: 8/18/52

Drilled by: Eagle-Picher, DMA

Logged by: Davis & Poehlmann

Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay & soil
5	10	Brown/buff clay & dolomite rubble
10	15	Brown/buff clay & some buff dolomite
15	25	Buff dolomite, few specks limonite
25	35	Buff dolomite, thin trace limonite
35	40	Buff dolomite, thin trace limonite
40	45	Buff dolomite, tan chert 98-2, few specks limonite DRAB - 41
45	50	Buff dolomite, brown & tan chert 96-4
50	60	Light brown dolomite, brown chert 95-5
60	70	Light brown dolomite, brown & tan chert 97-3, thin trace limonite & marcasite
70	80	Light brown dolomite, tan chert 98-2, trace limonite & marcasite
80	85	Light brown dolomite, brown & tan chert 96-4, marcasite ½, trace limonite.
85	90	Light brown dolomite, brown chert 88-12, considerable buff dolomite, marcasite ½, trace limonite.
90	100	Pale brown dolomite, brown & tan chert 98-2, trace marcasite
100	110	Pale brown dolomite, tan chert 97-3, thin trace marcasite.
110	120	Light brown dolomite, gray chert 99-1, few specks gray & brown clay, few specks marcasite.
120	130	Light brown dolomite, brown & tan chert 95-5, marcasite ½
130	135	Light brown dolomite, few specks chert, brown, gray & yellow clays 1, trace marcasite.
135	140	Light brown dolomite, brown, gray & yellow clays 5, thin trace marcasite
140	145	Light gray dolomite, light brown dolomite 80-20, thin trace marcasite GRAY -140½
145	150	Light gray/brown dolomite, thin trace marcasite
150	152½	Gray dark/speck dolomite, gray dolomite 80-20, trace marcasite BLUE -150½
152½	155	Gray dark/speck dolomite, brown buff dolomite 60-40, trace marcasite
155	157½	Small recovery, gray dark/speck dolomite, brown/buff dolomite 50-50, few specks marcasite OIL 160
157½	160	Brown/buff dolomite, gray dark speck dolomite 60-40, few specks gray clay, some fossiliferous, few specks marcasite
160	162½	Light brown fossiliferous limey dolomite, brown/buff & gray dark/speck dolomite 60, trace marcasite, broken ground
162½	165	Brown & tan fossiliferous limestone, trace brown shale, gray clay 5, thin trace marcasite.
165	167½	Brown & tan fossiliferous limestone, brown shale 10, thin trace marcasite
167½	170	Brown & tan fossiliferous limestone, brown shale 5, thin trace marcasite.
170	172½	Gray brown & tan fossiliferous limestone, dark gray fossiliferous limestone 80-20, brown shaley limestone 10, few specks marcasite CLAY -172

Continued

Lafayette County
~~Sec. R~~ ~~151~~

~~Serial No. 86~~
Hole No. 3 (Cont'd)
Collar Elevation: 949.35'
Depth of Hole: 183.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 8/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
172½	175	Light brown & tan limestone, considerable light gray dolomite, trace brown shale & fossiliferous, trace marcasite GLASS -172½
175	177½	Brown & tan specks limestone, considerable light gray dolomite, brown shale 1, green shale 1, trace marcasite
177½	180	Brown & tan limestone, light gray dolomite 4, trace green shale & gray clay, trace marcasite.
180	182½	Brown & light brown limestone, gray dolomite limestone 80-40, green shale 1, trace marcasite McGREGOR 181½

Water table: 29'

Serial No. 87
Hole No. 4
Collar Elevation: 979.46'
Depth of Hole: 220.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 8/23/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Buff clay, soil & some dolomite & chert rubble
5	10	Buff dolomite some brown-buff clay & red chert, few specks marcasite, trace limonite
10	15	Buff dolomite, few specks limonite
15	30	Buff dolomite, few specks limonite
30	45	Buff dolomite
45	60	Buff dolomite
60	75	Buff dolomite, few specks calcite, few specks limonite
75	80	Buff dolomite
80	85	Buff dolomite, few specks limonite
85	90	Buff dolomite, brown & tan chert 97-3, few specks limonite DRAB - 85
90	95	Light brown dolomite, brown & gray chert 95-5, few specks marcasite & limonite
95	100	Light brown dolomite, brown & gray chert 94-6, few specks limonite, thin trace marcasite
100	105	Light brown & buff dolomite, brown & tan chert 99-1, few specks marcasite
105	115	Light brown dolomite, brown & tan chert 96-4, marcasite 1/10
115	125	Light brown dolomite, brown & tan chert 95-5, few specks marcasite & limonite
125	135	Light btown dolomite, brown & tan chert 98-2, trace marcasite & limonite
135	145	Light brown dolomite, trace tan chert, trace marcasite
145	155	Light brown dolomite, brown & tan chert 95-5, few specks marcasite & limonite

Continued

Lafayette County
~~Sec. Rec. 151~~

~~Serial No. 87~~
Hole No. 4 (Cont'd)
Collar Elevation: 979.46'
Depth of Hole: 220.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 8/23/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
155	165	Light brown dolomite, tan chert 99-1, few specks marcasite loose ground
165	175	Brown dolomite, brown & tan chert 94-6, trace marcasite
175	180	Brown dolomite, brown & gray chert 93-7, few specks marcasite
180	185	Brown dolomite, brown & gray chert 97-3, trace marcasite
185	190	Brown dolomite, some gray-brown dolomite, gray chert 1, trace marcasite GRAY ??
190	195	Brown dolomite, trace gray-brown dolomite, trace gray chert, trace marcasite
195	200	Light brown dolomite, few specks chert, thin trace marcasite
200	205	Gray dark-speckled dolomite, thin trace marcasite BLUE -200
205	207½	Gray dark-speckled dolomite, trace brown dolomite limestone, thin trace marcasite, few specks blende & galena
207½	210	Brown limy shale & brown clay, few fossils, trace marcasite, few specks blende & galena OIL - 207½
210	212½	Gray clay & some green shale, trace brown limestone, trace marcasite CLAY -210
212½	215	Dark brown dolomitic limestone, gray clay 5, trace marcasite GLASS -212½
215	217½	Brown & light brown limestone & dolomitic limestone, gray dolomitic limestone 80-20, trace marcasite McGREGOR -217
217½	220	Gray dolomitic limestone, some brown dolomitic limestone, trace gray clay, marcasite ½

Water table: 59'

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Lafayette County
~~Sec. [illegible]. 151~~

~~Serial No. 113~~
Hole No. 5
Collar Elevation: 918.40'
Depth of Hole: 153.0'
Location: Clarence P. Ralph

Date completed: 4/24/53
Drilled by: Eagle-Picher, DMA
Logged by: Farrey
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Black soil	
6	10	Buff & pale buff dolomite, gray-brown clay 10, few specks limonite	
10	15	Brown dolomite, buff dolomite 50-50, few specks tan & red chert, trace limonite	DRAB - 12.5
15	20	Brown dolomite, tan chert 98-2, black soil (ravelling), buff dolomite (ravelling)	
20	30	Light brown dolomite, tan & gray chert 94-6, black soil (ravelling), marcasite 7/10, few specks galena	
30	35	Light brown dolomite, gray chert 93-7, marcasite 7/10	
35	40	Gray-brown dolomite, gray chert 93-7, medium coarse cuttings dolomite & chert oxidized 50, marcasite 1/10	
40	50	Gray-brown dolomite, gray chert 98-2, trace calcite, marcasite 1	
50	60	Gray-brown dolomite, gray chert 98-2, trace calcite, marcasite 7/10	
60	70	Gray-brown dolomite, gray chert 95-5, marcasite 1 5/10	
70	80	Light brown dolomite, gray chert 98-2, marcasite 5, few specks blende	
80	90	Light brown dolomite, gray chert 98-2, marcasite 9	
90	100	Light brown dolomite, gray & tan chert 94-6, marcasite 4	
100	105	Light brown dolomite, gray chert 99-1, marcasite 1	
105	110	Gray dolomite, light brown dolomite (80-20), few specks tan chert, marcasite 3/10	GRAY - 106
110	112½	Gray dolomite, marcasite 2/10	
112½	115	Gray dolomite, marcasite 2	
115	117½	Gray dolomite, marcasite 1/10	
117½	120	Gray dolomite, marcasite 5/10	BLUE - 120
120	122½	Dark gray speckled dolomite, trace calcite, marcasite 5/10	
122½	125	Dark gray speckled dolomite, trace calcite, marcasite 1/10	
125	127½	Dark gray speckled dolomite, trace calcite, marcasite trace	
127½	130	Tan limestone, calcite 1/10, marcasite 1/10	OIL - 127½
130	132½	Brown & tan limestone, calcite 1/10, marcasite 1/10	
132½	135	Brown & tan limestone, dark brown shale 5, trace calcite, marcasite 1/10, few specks galena	
135	137½	Brown & tan dolomitic limestone, tan limestone 10, calcite 1/10, marcasite 1/10	
137½	140	Tan & gray limestone, trace calcite, marcasite 1/10	
140	142½	Tan clay, brown limestone 40-60, trace marcasite	CLAY - 140
142½	145	Tan limestone fossils, marcasite 1/10, medium coarse cuttings	
145	147½	Tan limestone, trace marcasite, medium coarse cuttings	
147½	150	Tan limestone, trace marcasite, medium coarse cuttings	
150	152½	Tan limestone, gray dolomitic limestone (60-40), trace marcasite, medium coarse cuttings	McGREGOR - 151½

Driller's Remarks: Lost most of the cuts from 60' to 90'. The ground was loose from 70-75. The ground was ribby from 60' to 100' and soft from 100 to 130 and hard from 130-137½. Driller called Clay Bed from 140½ to 143½. There was strong water at 55' and 90'.

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Lafayette County
~~Sec. [illegible] f.151~~

~~Serial No. 128~~
Hole No. 6
Collar Elevation: 938.02'
Depth of Hole: 180.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 7/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	4	Soil	
4	20	Buff dolomite, few specks limonite and marcasite	
20	25	Brown-buff dolomite, a few specks of marcasite	
25	30	Buff-brown dolomite	
30	35	Buff-brown calcareous dolomite	
35	40	Brown calcareous dolomite	
40	45	Brown calcareous dolomite, specks of marcasite	
45	50	Brown dolomite, brown & gray-brown chert 96-4, trace of marcasite	DRAB - 47.5'
50	60	Brown dolomite, gray-brown chert 93-7, marcasite 4/10	
60	70	Brown dolomite, gray & brown chert 91-9, marcasite 1	
70	80	Brown dolomite, gray & gray-brown chert 90-10, marcasite 1½	
80	85	Pale brown dolomite, light gray & white chert 70-30, marcasite 3/10	
85	90	Pale brown dolomite, light gray & white chert 93-7, marcasite 4/10, speck of blende	
90	100	Brown dolomite, gray chert 92-8, marcasite 1/10, speck of blende	
100	110	Brown dolomite, gray-brown chert 96-4, marcasite 3/10, blende 1/10	
110	120	Brown dolomite, tan chert 93-7, marcasite ½, trace of blende	
120	125	Brown dolomite, few specks of chert, marcasite ½, speck of blende	
125	130	Brown dolomite, (some marcasite-speckled), few specks of marcasite-speckled chert, marcasite 5, a speck of blende	
130	135	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 2, blende 2	
135	140	Brown dolomite, tan and brown chert 92-8, marcasite 2, blende 3	
140	142½	Brown dolomite, gray-brown and brown chert 93-7, marcasite 6, blende ½	
142½	145	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 30, blende 10	
145	147½	Brown dolomite, gray marcasite-speckled chert 98-2, marcasite 15, blende 4	
147½	150	Brown dolomite, gray dolomite 80-20, marcasite 6, blende 2	GRAY - 149.5'
150	152½	Gray dolomite, marcasite 5, blende 1/2	
152½	155	Gray dolomite, marcasite 5, blende 1	
155	157½	Gray dolomite, marcasite 12, blende 2	
157½	160	Gray marcasite-speckled dolomite, marcasite 22, blende 4	
160	162½	Gray clay and gray dolomite, marcasite 75, blende 2 (?)	BLUE - 160'
162½	165	Gray clay and dolomite, marcasite 70, trace of blende (?)	
165	167½	Brown dolomitic limestone (soft), trace of gray clay, marcasite 12, blende 1/2	OIL ROCK - 165.2'
167½	170	Light tan fossiliferous limestone, dark brown shaly limestone 95-5, marcasite 5, blende ½, speck of galena	
170	172½	Green clay, brown-gray dark speckled limestone 80-20, marcasite 3, blende 3/10	CLAY - 171.5' (per driller
172½	175	Dark brown limestone and dolomitic limestone, chocolate brown shale 97-3, marcasite 30, blende 2 (?)	GLASS - 172.5'
175	177	Brown limestone, chocolate brown shale 99-1, marcasite 5, blende ½	
177	180	Gray dolomitic limestone, marcasite 8, blende 2	McGREGOR - 177.0'

Water table: 17'

Continued

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Lafayette County
Sec. Ref. 151

~~Serial No. 128~~
Hole No. 6 (Continued)
Collar Elevation: 938.02'
Depth of Hole: 180.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 7/8/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	ZnS	Assays FeS2	PbS
130	135	3.30	6.42	0.12
135	140	5.10	7.49	0.12
140	145	1.30	7.27	0.12
142½	145	8.60	22.04	0.12
145	147½	1.35	9.41	0.12
147½	150	1.85	7.70	0.12
150	152½	0.30	10.48	0.12
152½	155	1.55	12.84	0.12
155	157½	3.85	16.69	0.12
157½	160	3.25	28.24	0.12
160	162½	1.40	58.42	0.15
162½	165	0.10	51.78	0.15
172½	175	0.85	22.68	0.15

Lafayette County
Sec. Ref. 151

Serial No. 129
Hole No. 7
Collar Elevation: 961.99'
Depth of Hole: 211.5' (Measured)
Location: Clarence P. Ralph

Date completed: 7/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	6	Soil
6	10	Buff clay, few coarse cuts buff dolomite,
10	15	Dark buff dolomite, few cuts red chert, trace limonite
15	45	Dark buff dolomite, few specks limonite
45	50	Buffish-brown dolomite, few specks marcasite
50	55	Gray-brown dolomite, few specks marcasite
55	60	Gray-brown & buffish-brown dolomite, trace marcasite
60	65	Buffish-brown dolomite, marcasite 1/10
65	70	Buffish-brown dolomite, trace calcite, trace marcasite
70	75	Buffish-brown dolomite, few specks calcite, trace marcasite
75	80	Brown dolomite, gray-brown chert 98-2, marcasite 1/10 DRAB - 77.5'
80	90	Brown dolomite, gray & gray-brown chert 94-6, marcasite 1
90	100	Brown dolomite, gray and gray-brown chert 95-5, marcasite 3, few specks of galena, trace of dark brown shale
100	110	Brown dolomite, gray chert 98-2, trace dark brown shale, marcasite 2
110	120	Pale brown dolomite, white chert 90-10, marcasite 1
120	130	Pale brown dolomite, light gray-brown chert 90-10, marcasite 2, a speck of blende
130	140	Brown dolomite, gray-brown chert 94-6, marcasite ½
140	150	Brown dolomite, trace tan chert, marcasite 3/10
150	160	Brown dolomite, tan chert 99-1, marcasite 4/10

Continued

Lafayette County
~~Sec. [illegible] T. 151~~

~~Serial No. 129~~
Hole No. 7 (Continued)
Collar Elevation: 961.99'
Depth of Hole: 211.5' (Measured)
Location: Clarence P. Ralph

Date completed: 7/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology	
160	170	Brown dolomite, brown and tan chert 92-8, marcasite 6/10	
170	175	Small recovery. Brown dolomite, gray-brown chert 96-4, marcasite 3	
175	180	Brown dolomite, trace brown chert, marcasite 10, blende 3/10	
180	182½	Brown dolomite, gray dolomite 80-20, marcasite 8, blende 2/10	GRAY - 182'
182½	185	Gray dolomite, marcasite 8, blende 1/10	
185	187½	Brown-gray dolomite, marcasite 7, trace of blende	
187½	190	Brown-gray dolomite, marcasite 9, blende 1/10	
190	192½	Brown-gray dolomite, gray clay 80-20, marcasite 6, blende 1/10	BLUE - 192'
192½	195	Dark gray dolomite, trace gray clay, marcasite 4, trace of blende	
195	197½	Brown dolomitic limestone, gray clay 60-40, marcasite 1½, a speck of blende	OIL - 196'
197½	200	Brown fossiliferous dolomitic limestone, marcasite 4, trace of blende	
200	202½	Light brown and tan fossiliferous limestone, light gray clay 3, marcasite 1, few specks of blende	CLAYBED - 202.4'
202½	205	Brown dolomitic limestone, light gray clay and green shale 60-40, marcasite 2, few specks of blende	GLASS - 203.5'
205	207½	Dark brown dolomitic limestone, chocolate brown shale 98-2, marcasite 1, few specks of blende	
207½	211	Gray dolomitic limestone, dark brown dolomitic limestone, 90-10, marcasite 1, trace of blende	McGREGOR - 207.9'

Water table: 38.5'

Depth From	To	Assays ZnS	FeS_2	PbS
175	180	0.30	7.09	None
180	182½	0.31	7.00	None
182½	185	0.22	9.67	None
185	187½	0.21	10.53	None
187½	190	0.45	9.35	None

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Lafay[illegible]e County
~~Sec. Ref. 151~~

~~Serial No. 141~~
Hole No. 8
Collar Elevation: 994.84'
Depth of Hole: 242.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed:
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	30	Buff clay	
30	40	Buff dolomite	
40	50	Buff dolomite, a speck of limonite	
50	60	Buff dolomite, few specks of limonite	
60	70	Buff dolomite (coarse cuts)	
70	80	Buff and dark buff dolomite, few specks limonite	
80	90	Dark buff dolomite	
90	100	Dark buff dolomite, few specks brown dolomite, a speck of calcite, a speck of marcasite	
100	105	Dark buff dolomite, brown dolomite 50-50, trace of calcite, thin trace of marcasite	
105	110	Brown dolomite, dark brown chert 95-5, marcasite 4/10	DRAB - 107.5'
110	120	Brown dolomite, gray marcasite-speckled chert and dark brown chert 88-12, marcasite 2, few specks of galena	
120	130	Brown dolomite, gray and brown chert 93-7, marcasite 4, few specks of galena and a speck of blende	
130	135	Brown dolomite, gray marcasite-speckled and brown chert 92-8, marcasite 9, few specks of galena	
135	140	Brown dolomite, gray and tan chert 94-6, marcasite 7, few specks of galena	
140	150	Pale brown dolomite, gray and white chert 92-8, marcasite 7/10, few specks of galena	
150	160	Brown dolomite, brwon-gray chert 93-7, marcasite 1/2, a speck of galena	
160	165	Brown dolomite, tan and brown-gray chert 80-20, marcasite 4/10, a speck of blende	
165	170	Brown dolomite, tan chert 94-6, marcasite 6/10, a speck of galena	
170	180	Brown dolomite, tan chert 97-3, marcasite 1/2	
180	185	Brown dolomite, tan chert 99-1, marcasite 3	
185	190	Brown dolomite, tan chert 93-7, marcasite 20	
190	195	Brown dolomite, tan and gray-brown chert 90-10, marcasite 7	
195	200	Brown dolomite, tan and gray-brown chert 93-7, marcasite 5	
200	205	Brown dolomite, trace of tan chert, marcasite 2	
205	210	Brown dolomite, trace of tan chert, marcasite 6	
210	212½	Very small recovery: Brown dolomite, speck of chert, marcasite 5	
212½	215	Brown-gray dolomite, trace of gray clay, marcasite 4	GRAY - 212.5'
215	217½	Gray-brown dolomite, a speck of green shale, marcasite 1½	
217½	220	Gray-brown dolomite, marcasite 2	
220	222½	Gray-brown dolomite, gray coarse-grained dolomite 90-10, marcasite 2, blende 1/2	
222½	225	Small recoveries: Gray-brown dolomite, gray coarse-grained dolomite 85-15, gray clay 1, marcasite 3, blende 1	BLUE - 222.3'
225	227½	Gray coarse-grained dark-speckled dolomite, gray-brown dolomite 80-20, gray clay 3, marcasite 4, blende 2	
227½	230	Brown fossiliferous dolomitic limestone, gray coarse-grained dolomite 90-10, trace of brown clay, marcasite 3, blende 3	OILROCK - 227.8'

Continued

Lafay[illegible]e County
~~Sec. Ref. 151~~

~~Serial No. 141~~
Hole No. 8 (Continued)
Collar Elevation: 994.84'
Depth of Hole: 242.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed:
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
230	232½	Brown fossiliferous dolomitic limestone and brown shaly limestone, marcasite 3, coarse blende 4	
232½	235	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 2, blende 5	CLAY - 234'
235	237½	Coarse cuts: Dark brown dolomite, gray clay 90-10, marcasite 1, blende 1, trace of calcite	GLASS - 236'
237½	240	Brown dolomite, gray dolomitic limestone (coarse cuts) 60-40, marcasite 1, blende 1	McGREGOR - 239'
240	242½	Gray dolomitic limestone, marcasite 6/10, blende 4/10	

Water table: 77'

Depth From	Depth To	Remarks
		Driller's remarks:
115	125	Broken ground; lost some cuttings
	146	Crack
185	205	Broken ground; lost some cuttings
215	237½	Soft ground

Depth From	Depth To	Assays ZnS	FeS_2	PbS
220	222½	0.65	9.84	0.13
222½	225	1.45	11.12	0.13
225	227½	1.35	9.20	0.13
227½	230	3.95	8.13	0.13
230	232½	6.85	6.42	0.13
232½	235	5.75	6.20	Trace
235	237½	1.85	5.77	Trace
237½	240	0.95	4.99	Trace

Lafayette County
~~Sec. Ref. 151~~

~~Serial no. 142~~
Hole No. 9
Collar Elevation: 993.18'
Depth of Hole: 241.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 9/30/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	8	Soil	
8	20	Coarse cuts: Buff dolomite	
20	40	Buff dolomite	
40	50	Coarse Cuts: Light buff dolomite	
50	60	Coarse cuts: Buff dolomite, specks of limonite	
60	65	Coarse cuts: Dark buff dolomite, galena 1, few specks of limonite	
65	70	Buff dolomite, Galena 1/10	
70	80	Coarse cuts: Buff dolomite, few specks of galena	
80	90	Coarse cuts: Buff dolomite	
90	95	Brown-buff dolomite and dark buff dolomite, specks of marcasite	
95	100	Buff-brown dolomite, few specks of calcite, trace of marcasite	
100	105	Light tan and brown dolomite, trace of marcasite, few specks of galena	
105	110	Brown dolomite, white, gray and brown chert 92-8, trace of marcasite, trace of galena	DRAB - 107.5'
110	120	Pale brown dolomite, white and gray chert 93-7, marcasite 3	
120	130	Pale brown dolomite and light tan dolomite, white and gray chert 97-3, marcasite 1	
130	140	Pale brown dolomite, gray and white chert 94-6, marcasite 4/10	
140	145	Light brown-gray dolomite, gray and white chert 95-5, marcasite 3/10	
145	150	Brown dolomite, gray-brown chert 94-6, marcasite 2	
150	160	Brown dolomite, gray-brown chert 95-5, marcasite 1/2	
160	170	Brown dolomite, tan chert 96-4, marcasite 4/10	
170	180	Brown dolomite, tan chert 98-2, marcasite 4/10	
180	185	Brown dolomite, few specks of chert, marcasite 2/10	
185	190	Brown dolomite, tan chert 95-5, marcasite 1/2	
190	195	Small recovery: Few extra coarse cuts, Brown dolomite, tan chert 93-7, marcasite 8/10	
195	200	Entire recovery consists of one 1" boulder, brown marcasite-speckled dolomite, trace of calcite	
200	205	Brown dolomite, tan and brown chert 95-5, marcasite 5	
205	210	Brown dolomite, gray dolomite 80-20, marcasite 5	GRAY - 209'
210	212½	Very small recovery: Brown dolomite ravellings, gray dolomite 60-40, marcasite 8	
212½	215	Gray dolomite, brown dolomite ravelling 5, marcasite 3	
215	217½	Brown-gray dolomite, marcasite 2	
217½	220	Gray-brown dolomite, marcasite 1, specks of blende	
220	222½	Gray-brown dolomite, marcasite 3, specks of blende	
222½	225	Gray-brown dolomite, gray clay 80-20, marcasite 4, blende 1/2	BLUE - 224.5
225	227½	Gray dark-speckled dolomite, brown dolomite 95-5, trace of calcite, gray clay 2, marcasite 3, blende 2/10	
227½	230	Gray dark-speckled dolomite, brown dolomitic limestone, gray clay, brown clay 77-18-3-2, marcasite 6, blende 1	OILROCK - 229.5'
230	232½	Brown fossiliferous dolomitic limestone, brown clay 90-10, marcasite 5, blende 3	
232½	235	Green clay, dark gray fossiliferous dolomitic limestone 95-5, marcasite 2, blende 1	CLAYBED - 232.5'
235	237½	Coarse cuts: Dark brown dolomite, gray clay (Bentonite) 80-20, marcasite 4, calcite 1, blende 1/2	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 142~~
Hole No. 9 (Continued)
Collar Elevation: 993.18'
Depth of Hole: 241.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 9/30/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
237½	240	Brown limestone, chocolate brown shale and brown clay 98-2, marcasite 5, blende 4/10
240	242	Gray dolomitic limestone, brown limestone 90-10, marcasite 1, blende 1/10

McGREGOR - 240.2'

Water table: 76'

Depth From	Depth To	Remarks
		Driller's remarks:
193	222½	Loose ground
225	237½	Soft ground

Depth From	Depth to	ZnS	Assays FeS_2	PbS
222½	225	0.25	7.06	Trace
225	227½	0.90	9.63	Trace
227½	230	1.15	8.98	0.92
230	232½	4.90	9.41	Trace
232½	235	1.65	7.91	0.58
235	237½	0.60	7.27	0.11
237½	240	0.10	6.42	0.11

Lafayette County
~~Sec. [illegible] T. 151~~

~~Serial No. 143~~
Hole No. 10
Collar Elevation: 962.51'
Depth of Hole: 210.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/5/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Brown soil	
6	10	Coarse cuts: Buff dolomite, few specks red residual chert, few specks of limonite	
10	20	Coarse cuts: Buff dolomite, trace of limonite	
20	40	Coarse cuts: Buff dolomite, few specks of limonite	
40	55	Buff and dark buff dolomite	
55	60	Buff dolomite, brown-gray dolomite 60-40	
60	65	Pale brown dolomite, buff dolomite 90-10, a speck of marcasite and calcite	
65	70	Pale brown dolomite, few specks calcite, thin trace of marcasite	
70	75	Brown dolomite, a speck of calcite, marcasite 1/10	
75	80	Brown dolomite, gray-brown and brown chert 96-4, marcasite 2/10, few specks of dark brown shale	DRAB - 77.5'
80	85	Buffish brown dolomite, light gray chert 94-6, trace of dark brown shale, marcasite 2	
85	95	Brown dolomite, gray-brown chert 92-8, marcasite 1½	
95	100	Brown dolomite, gray, brown and tan chert 91-9, marcasite 1	
100	110	Brown dolomite, white and gray chert 95-5, marcasite 1	
110	120	Light brown-gray dolomite, gray and white chert 85-15, marcasite 1	
120	130	Brown-gray dolomite, gray chert 95-5, marcasite 1/2	
130	140	Brown dolomite, tan chert 95-5, trace of gray chert, marcasite 6/10, a speck of blende	
140	145	Brown dolomite, tan chert 93-7, marcasite 4/10	
145	155	Brown dolomite, tan and gray chert 99-1, marcasite 2/10	
155	165	Brown dolomite, tan and gray-brown chert 92-8, marcasite 2, few specks of blende	
165	175	Brown dolomite, tan and brown chert 93-7, marcasite 1½, a speck of blende	
175	180	Brown dolomite, gray dolomite 95-5, marcasite 4, few specks of blende	GRAY - 179.9'
180	182½	Gray dolomite, marcasite 3, few specks of blende	
182½	185	Gray dolomite, marcasite 1, a speck of blende	
185	187½	Gray dolomite, marcasite 2, a speck of blende	
187½	190	Brown-gray dolomite, marcasite 1, a speck of blende	
190	192½	Brown-gray dolomite, marcasite 8/10, a speck of blende	
192½	195	Gray dark-speckled dolomite, trace of gray clay, marcasite 1, a speck of blende	BLUE - 192.5'
195	197½	Dark gray dark-speckled dolomite, gray clay 4, marcasite 4/10, few specks of blende	
197½	200	Light brown fossiliferous limestone (soft), dark gray-speckled dolomite 80-20, marcasite 1, trace of blende	OIL - 198.0'
200	202½	Light brown fossiliferous limestone and brown shaly limestone, marcasite 8/10, trace of blende	
202½	205	Brown fossiliferous limestone and shaly limestone, green clay 60-40, marcasite 7/10, trace of blende	CLAYBED - 204'
205	207½	Coarse cuts: Dark brown dolomitic limestone, green clay 90-10, marcasite 1, few specks of calcite, few specks of blende	GLASS - 207'
207½	210	Coarse cuts: Gray dolomitic limestone, dark brown dolomitic limestone, chocolate brown shale 60-35-5, marcasite 2/10	McGREGOR -208.5'

Lafayette County
~~Sec. [illegible] 151~~

~~Serial No. 144~~
Hole No. 11
Collar Elevation: 939.57'
Depth of Hole: 183.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/8/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	4	Soil	
4	10	Coarse cuts: Dark buff dolomite, specks of limonite	
10	20	Buff dolomite	
20	30	Buffish-brown dolomite	
30	40	Brown dolomite, a speck of marcasite	
40	45	Brown dolomite (slightly calcareous), specks of marcasite	
45	50	Buffish-brown dolomite, few specks of calcite, few specks of marcasite	
50	55	Brown dolomite, tan and gray-brown chert 95-5, marcasite 1/10	DRAB - 52.5'
55	65	Brown dolomite, gray-brown and marcasite-speckled dolomite 91-9, marcasite 6	
65	75	Brown dolomite, gray-brown chert 94-6, marcasite 4	
75	80	Brown dolomite, gray and gray-brown chert 96-4, marcasite 1	
80	85	Pale brown-gray dolomite, light gray and white chert 80-20, marcasite 3/10	
85	95	Brown dolomite, gray and brown-gray chert 93-7, marcasite 1/2	
95	105	Brown dolomite, brown chert 97-3, trace of green shale, marcasite 1/2, trace of blende	
105	115	Brown dolomite, gray and tan chert 98-2, green shale 5, marcasite 6/10, trace of blende	
115	125	Brown dolomite, trace of tan chert, green shale 7, marcasite 5, blende 1/2	
125	130	Brown dolomite, tan chert 99-1, green shale 4, marcasite 4, blende 3/10	
130	135	Brown dolomite, marcasite-speckled chert and gray-brown chert 90-10, green shale 3, marcasite 18, blende 9	
135	137½	Brown dolomite, marcasite-speckled chert 95-5, marcasite 55, blende 30	
137½	140	Brown dolomite, tan and brown chert 93-7, marcasite 7, blende 3	
140	142½	Brown dolomite, brown and tan chert 88-12, marcasite 3, blende 1	
142½	145	Brown dolomite, tan and brown chert 92-8, marcasite 2, blende 7/10	
145	150	Brown dolomite, trace of tan chert, marcasite 35, blende 20	
150	152½	Gray dolomite, marcasite 25, blende 8	GRAY - 150'
152½	155	Gray dolomite, marcasite 40, blende 15	
155	157½	Gray dolomite, marcasite 25, blende 12	
157½	160	Gray dolomite, marcasite 40, blende 15	
160	162½	Gray dolomite, marcasite 25, blende 10	
162½	165	Gray dolomite, marcasite 45, blende 5	
165	167½	Gray dolomite, marcasite 30, blende 20	
167½	170	Gray marcasite-speckled dolomite, marcasite 50, blende 10	
170	172½	Gray marcasite-speckled dolomite, trace of gray clay, marcasite 25, blende 5	OILROCK - 172.5'
172½	175	Brown fossiliferous dolomitic limestone and brown shaly limestone, green clay 80-20, marcasite 15, blende 5	CLAY - 174.5'
175	177½	Dark brown dolomitic limestone, green clay, cream colored chert 85-10-5, marcasite 20, blende 3	GLASS - 176.'(?
177½	180	Dark brown dolomitic limestone and limestone, gray dolomitic limestone, chocolate brown shale 92-5-8, marcasite 10, blende 3	McGREGOR - 179.9'
180	182	Gray dolomitic limestone, marcasite 9, blende 4	

Water table: 18'

Continued 1659

Lafayette County
~~Sec. [illegible]. 151~~

~~Serial No. 144~~
Hole No. 11 (Continued)
Collar Elevation: 939.57'
Depth of Hole: 183.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/8/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Remarks
		I am sure that the mineralization in the last few cuts is ravellings from higher up in the hole. The McGregor was quite firm.
		H. W. Davis

Driller's Remarks:

135	137½	Loose ground
137½	165	Broken ground
167½	180	Soft ground
180	182	Firm

Depth From	Depth To	Assays ZnS	FeS₂	PbS
130	135	7.00	15.40	0.13
135	137½	22.30	42.80	0.27
137½	140	2.00	7.27	0.12
140	142½	0.30	5.13	Trace
142½	145	0.35	2.56	Trace
145	150	11.15	35.31	0.12
150	152½	2.60	24.61	0.12
152½	155	9.55	28.03	0.12
155	157½	11.85	23.96	0.12
157½	160	5.70	27.82	0.12
160	162½	3.05	22.04	0.15
162½	165	1.50	32.10	0.12
165	167½	14.60	29.53	0.14
167½	170	3.30	27.82	0.12
170	172½	1.85	20.97	0.12
172½	175	1.25	19.68	0.12
175	177½	0.30	14.33	0.14
177½	180	0.85	20.75	0.14
130	175	10.98		

~~Serial No. 145~~
Hole No. 12
Collar Elevation: 937.44'
Depth of Hole: 200.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
~~Sec. [illegible] f. 151~~

Date completed: 10/13/53
Drilled by: Eagle-Picher Co.,DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	3	Soil
3	10	Dark buff dolomite, dark red chert 99-1, traces of marcasite, few specks of limonite
10	15	(Coarse cuts) Buff dolomite, few specks dark buff and red chert, specks of light gray chert, few specks of marcasite
15	20	Buff dolomite, few specks of marcasite
20	30	Light buff dolomite, specks of marcasite
30	40	Pale brown calcareous dolomite, few specks of marcasite
40	45	Light brown calcareous dolomite, few specks of marcasite
45	50	Brown dolomite, gray and brown chert 96-4, marcasite 2/10, few specks of blende — DRAB - 47.5'
50	55	Brown dolomite, marcasite-speckled chert 88-12, marcasite 8, blende 1/2
55	60	Brown dolomite, gray and marcasite-speckled chert 90-10, marcasite 6, blende 1
60	65	Brown dolomite, tan and marcasite-speckled chert 94-6, marcasite 9, blende 3, galena 1/2
65	70	Brown dolomite, brown-gray chert 92-8, marcasite 5, blende 3, trace of galena
70	75	Brown dolomite and gray dolomite, trace of gray chert, marcasite 4, blende 2, trace of galena
75	80	Light brown dolomite, gray and white chert 80-20, marcasite 3, blende 1, few specks of galena
80	85	Light brown dolomite, tan and light gray chert 94-6, marcasite 2, blende 7/10
85	90	Brown dolomite, gray and tan chert 93-7, marcasite 2, blende 1/2, trace of galena
90	95	Brown dolomite, gray-brown chert 93-7, marcasite 2, blende 3/10, few specks of galena
95	100	Brown dolomite, gray-brown chert 95-5, marcasite 3, blende 3, few specks of galena
100	105	Brown dolomite, gray-brown chert 96-4, marcasite 5, blende 7
105	107½	Brown dolomite, gray-brown chert 96-4, speck of gray shale, marcasite 5, blende 3
107½	110	Brown dolomite, gray-brown chert 99-1, marcasite 4, blende 4
110	115	Brown dolomite, trace of gray chert, marcasite 7, blende 5
115	117½	Light brown dolomite, few specks of chert, marcasite 15, blende 6
117½	120	Brown dolomite, gray chert (trace), marcasite 7, blende 2
120	122½	Brown dolomite, brown-gray chert 98-2, marcasite 16, blende 3, few specks of galena
122½	125	Brown dolomite, gray marcasite-speckled chert 96-4, marcasite 8, blende 2
125	130	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 10, blende 2
130	135	Brown dolomite, gray marcasite-speckled chert 80-20, marcasite 25, blende 4
135	140	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 11, blende 1
140	145	Gray dolomite, brown dolomite 70-30, marcasite 6, blende 1 — GRAY - 141.5'
145	147½	Gray dolomite, marcasite 5, blende 1/2

Continued

Lafayette County
Sec. [illegible] ~~151~~

~~Serial No. 145~~
Hole No. 12 (Continued)
Collar Elevation: 937.44'
Depth of Hole: 200.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
147½	150	Brown-gray dolomite, marcasite 4, blende 7/10
150	152½	Brown-gray dolomite, marcasite 3, blende 1/2
152½	155	(Coarse cuts) Brown-gray dolomite, marcasite 2, blende 1/10
155	157½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, gray clay 1, few specks of calcite, marcasite 1, blende 1/10 BLUE - 156'
157½	160	Gray dark-speckled dolomite, gray clay 4, marcasite 4, blende 3/10
160	162½	Gray dark-speckled dolomite, marcasite 5, blende 1/10
162½	165	Gray dark-speckled dolomite, marcasite 20, blende 10
165	167½	Gray marcasite-speckled dolomite, brown dolomite and dark shale 80-20, marcasite 40, blende 20 OIL - 167'
167½	170	Dark brown dolomitic limestone and dark brown shaly limestone, marcasite 18, blende 8
170	172½	Brown fossiliferous dolomitic limestone and brown shaly limestone, green clay 60-40, marcasite 7, blende 4, few specks of galena CLAY - 171.5'
172½	175	Gray clay, gray-brown dark fossiliferous dolomitic limestone 70-30, marcasite 5, blende 2, few specks of galena
175	177½	Gray dolomitic limestone, dark brown dolomitic limestone, chocolate brown shale 60-38-2, marcasite 3, blende 1, speck of galena GLASS - 175' McGREGOR - 176'
177½	180	Gray dolomitic limestone (some marcasite-speckled dolomite) trace of calcite, marcasite 6, blende 4
180	182½	Gray dolomitic limestone (some marcasite-speckled dolomite) calcite 1, marcasite 5, coarse blende 5
182½	185	Brown-gray dolomitic limestone, marcasite 10, blende 5
185	187½	Brown-gray dolomitic limestone, few specks of calcite, marcasite 5, blende 2
187½	190	Brown-gray dolomitic limestone, marcasite 4, blende 3
190	192½	Gray dark-speckled limestone, trace of gray clay, marcasite 3, blende 2
192½	195	Gray dark speckled limestone, marcasite 1, blende 1
195	197½	Gray dark speckled limestone, marcasite 1, blende 1
197½	200	Gray limestone, marcasite 1, blende 1

Water table: 15'

Continued

Lafayette County
Sec. Ref. 151

~~Serial No. 145~~
Hole No. 12 (Continued)
Collar Elevation: 937.44'
Depth of Hole: 200.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
55	60	0.45	6.42	0.12
60	65	1.40	5.99	0.53
65	70	1.70	5.56	0.17
70	75	1.45	5.35	0.15
75	80	0.45	4.70	0.12
95	100	3.80	5.77	0.16
100	105	5.50	4.70	0.15
105	107½	3.40	5.77	0.13
107½	110	4.95	4.92	0.12
110	115	0.40	7.91	0.12
115	117½	1.30	8.56	0.12
117½	120	1.00	5.99	0.12
120	122½	0.85	13.26	0.15
122½	125	0.75	6.84	0.13
125	130	0.55	9.63	0.13
130	135	0.65	14.98	0.12
135	140	0.25	10.91	0.13
140	145	0.40	6.20	0.13
162½	165	11.70	12.62	0.13
165	167½	17.25	31.03	0.16
167½	170	4.95	14.98	0.15
170	172½	3.00	10.48	0.15
172½	175	1.35	9.63	0.15
175	177½	1.80	8.77	0.13
177½	180	2.25	10.05	0.13
180	182½	3.15	10.48	0.13
182½	185	3.50	7.27	0.12
185	187½	2.10	6.42	0.12
187½	190	1.95	6.42	0.13

Lafayette County
~~Sec. [illegible] T. 15[illegible]~~

~~Serial No. 146~~
Hole No. 13
Collar Elevation: 958.64'
Depth of Hole: 202.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/15/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Dark brown-buff clay	
10	15	Dark buff clay, buff dolomite (coarse cuts) 90-10, limonite 2	
15	20	(Coarse cuts) Buff dolomite, trace of limonite	
20	30	Coarse cuts: Buff dolomite, few specks of limonite	
30	40	Buff dolomite, few specks limonite and marcasite	
40	45	Brown-buff dolomite, trace of marcasite, few specks of blende	
45	50	Buff-brown dolomite, marcasite 1/10, speck of blende	
50	55	Brown calcareous dolomite, marcasite 1/2, speck of blende	
55	60	Brown calcareous dolomite, few specks of marcasite-speckled dolomite, marcasite 1/2, few specks of blende	
60	65	Brown calcareous dolomite, marcasite 4/10, speck of blende	
65	70	Brown calcareous dolomite, marcasite 1, thin trace of blende	
70	75	Gray-brown dolomite, few specks brown chert, marcasite 6/10	
75	80	Brown dolomite, gray chert 92-8, marcasite 3/10	DRAB - 75'
80	90	Brown dolomite, gray, brown and marcasite-speckled chert 90-10, trace of brown shale, marcasite 3	
90	100	Brown dolomite, gray chert 91-9, trace of brown shale, marcasite 3	
100	110	Brown-gray dolomite, gray and white chert 92-8, marcasite 3, a speck of blende (115-140' small recovery)	
110	120	Pale brown dolomite, brown-gray and white chert 93-7, marcasite 4, a speck of blende	
120	130	Brown dolomite, gray chert 97-3, marcasite 5, speck of blende and galena	
130	135	Brown dolomite, white chert 99-1, few specks pale green shale, marcasite 3, a speck of blende and galena	
135	140	Brown dolomite, trace of tan chert, marcasite 2, a speck of blende and galena	
140	150	Brown dolomite, tan chert 97-3, marcasite 2, galena 2/10	
150	155	Dark brown dolomite, marcasite-speckled chert 60-40, marcasite 3, galena 1/10	
155	160	Brown dolomite, gray-brown and marcasite-speckled chert 75-25, marcasite 2, trace of galena	
160	165	Brown dolomite, few specks of chert, marcasite 1, few specks of galena	
165	170	Brown dolomite, gray dolomite 70-30, marcasite 1½, galena traces	GRAY - 168.5
170	172½	Brown-gray dolomite, marcasite 8/10, few specks of galena	
172½	175	Brown-gray dolomite, marcasite 2½, speck of galena	
175	177½	Gray-brown dolomite, marcasite 1, speck of galena	
177½	180	Brown-gray dolomite, marcasite 3, trace of galena	
180	182½	Brown-gray dolomite, gray clay 1, marcasite 1, few specks galena	
182½	185	Gray and brown-gray dark speckled dolomite, gray clay 10, marcasite 1	BLUE - 182.5
185	187½	Gray dark speckled dolomite, marcasite 6/10	
187½	190	Gray dark speckled dolomite, brown dolomite 80-20, gray clay 2, marcasite 1/2	OILROCK - 189.5
190	192½	Brown fossiliferous dolomitic limestone, marcasite 1/2, few specks of blende	
192½	195	Brown fossiliferous dolomitic limestone, dark brown shale 80-20, brown clay 2, marcasite 2/10, few specks of blende and galena	
195	197½	Brown dolomitic limestone, gray clay 60-40, marcasite 2, few specks of blende and galena	CLAY - 196.5'
197½	200	Coarse cuts: Dark brown dolomitic limestone, (little gray dolomite ravelling), calcite 1, marcasite 1	GLASS - 198.5'

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 146~~
Hole No. 13 (Continued)
Collar Elevation: 958.64'
Depth of Hole: 202.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/15/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
200	202½	Gray dolomitic limestone, brown limestone, chocolate brown shale 70-29-1, marcasite 6/10, speck of blende McGREGOR - 200.7'

Water table: 38'

Lafayette County
Sec. Ref. 151

Serial No. 147
Hole No. 14
Collar Elevation: 962.10'
Depth of Hole: 202.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/20/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Coarse cuts: Dark buff dolomite, specks of marcasite and limonite
10	15	Buff dolomite
15	20	Buff dolomite, limonite 1/10, speck of marcasite
20	30	Buff dolomite, trace of limonite
30	40	Brown-buff dolomite
40	50	Brown-buff dolomite, speck of marcasite
50	55	Buffish-brown dolomite, few specks of calcite, marcasite 2/10
55	60	Brown calcareous dolomite, marcasite 1/10
60	65	Brown calcareous dolomite, marcasite 2/10
65	70	Brown calcareous dolomite, marcasite 4/10
70	75	Brown dolomite, brown chert 97-3, trace of dark brown shale, marcasite 2 DRAB - 72.5'
75	80	Brown dolomite, gray marcasite-speckled dolomite, gray-brown dolomite 88-12, marcasite 3, speck of blende
80	85	Brown dolomite, brown chert and gray marcasite-speckled chert 90-10, marcasite 5
85	90	Brown dolomite, brown chert and gray marcasite-speckled chert 90-10, marcasite 8
90	95	Brown dolomite, gray-brown chert 95-5, marcasite 4, few specks of blende
95	100	Brown dolomite, gray-brown chert 96-4, marcasite 2, a speck of blende
100	105	Brown dolomite, gray chert 98-2, marcasite 10, few specks blende
105	110	Light brown-gray dolomite, light gray and white chert 85-15, marcasite 4
110	115	Brown dolomite, light gray chert 99-1, marcasite 2
115	120	Brown dolomite, gray and gray-brown chert 60-40, marcasite 3, few specks of blende
120	130	Brown dolomite, tan chert 94-6, marcasite 1
130	140	Brown dolomite, tan chert 98-2, marcasite 3/10
140	145	Brown marcasite-speckled dolomite, tan chert 97-3, marcasite 3, speck of galena

Continued

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 147~~
Hole No. 14 (Continued)
Collar Elevation: 962.10'
Depth of Hole: 202.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/20/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
145	150	Dark brown marcasite-speckled dolomite, trace of tan chert, marcasite 15, few specks of galena	
150	155	Dark brown dolomite, marcasite-speckled chert and brown chert 82-18, marcasite 9, few specks of galena	
155	160	Brown dolomite, gray-brown marcasite-speckled and brown chert 88-12, marcasite 5, a speck of galena	
160	165	Dark brown dolomite, few specks gray-brown chert, marcasite 6	
165	170	Gray dolomite, brown dolomite 90-10, marcasite 2	GRAY - 165.5'
170	175	Gray marcasite-speckled dolomite and brown-gray dolomite, trace of pale green clay, marcasite 1	
175	177½	Brown-gray dolomite, marcasite 5/10, speck of calcite	
177½	180	Brown-gray dolomite, marcasite 1	
180	182½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, gray clay 5, marcasite 6/10	BLUE - 181.0'
182½	185	Gray dark-speckled dolomite, trace of calcite, marcasite 8/10	
185	187½	Gray dark-speckled dolomite, gray clay 2, trace of calcite, marcasite 1/2	
187½	190	Brown fossiliferous dolomitic limestone, gray dark-speckled dolomite 95-5, marcasite 3/10	OILROCK - 187.6'
190	192½	Coarse cuts: Brown fossiliferous dolomitic limestone, marcasite 1/2	
192½	195	Tan limestone, dark brown shaly limestone 95-5, light gray clay 1, marcasite 2/10	
195	197½	Light gray clay, brown-gray fossiliferous limestone 80-20, few specks of phosphorous nodules, marcasite 1/10	CLAY - 195'
197½	200	Coarse cuts: Very dark brown dolomitic limestone, trace of gray clay, trace of calcite, marcasite 4/10	GLASS - 198.5' as per driller
200	202½	Brown limestone and dolomitic limestone, gray limestone and dolomitic limestone (coarse cuts) 60-40, chocolate brown shale 1, marcasite 2/10, specks of calcite	McGREGOR - 201.5'

Water table: 42½'

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Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 148~~
Hole No. 15
Collar Elevation: 954.30'
Depth of Hole: 197.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/23/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6½	Soil	
6½	10	Buffish-brown clay, buff dolomite 80-20, trace of limonite	
10	20	Coarse cuts: Buff dolomite, limonite 1/2	
20	30	Buff dolomite, trace of limonite	
30	40	Buff and dark buff dolomite, few specks of calcite	
40	45	Dark buff dolomite, limonite 1/10	
45	50	Brown dolomite, dark buff dolomite 90-10, few specks marcasite	
50	55	Coarse cuts: Brown dolomite, dark buff dolomite 99-1, few specks of marcasite	
55	60	Brown dolomite, dark brown chert 97-3, few specks marcasite	DRAB - 57.5'
60	65	Brown dolomite, gray and tan chert 93-7, marcasite 1/10	
65	70	Brown dolomite, gray and tan chert 96-4, marcasite 4/10, few specks of blende	
70	80	Fine cuts: Brown dolomite, gray and tan chert 95-5, marcasite 3, a speck of blende	
80	90	Brown dolomite, gray chert 93-7, marcasite 1	
90	100	Brown-gray dolomite, light gray and white chert 91-9, marcasite 3/10	
100	110	Brown dolomite, gray chert 92-8, marcasite 2/10	
110	120	Brown dolomite, gray chert 99-1, marcasite 3/10	
120	130	Brown dolomite, tan chert 96-4, marcasite 1/2	
130	140	Brown dolomite, speck tan chert, marcasite 7/10, few specks blende	
140	145	Brown dolomite, tan, brown and marcasite-speckled chert 92-8, marcasite 7, blende 1	
145	150	Brown dolomite, tan, gray and brown and marcasite-speckled chert 90-10, marcasite 7, blende 1	
150	155	Small recovery: Brown dolomite, tan and gray chert 98-2, marcasite 12, blende 10	
155	157½	Small recovery: Brown dolomite, specks of gray dolomite, marcasite 20, blende 10	
157½	160	Small recovery: Gray dolomite, marcasite 15, blende 20	GRAY - 157½'
160	162½	Gray dolomite, marcasite 10, blende 4	
162½	165	Gray dolomite, marcasite 5, blende 25	
165	167½	Small recovery: Gray dolomite, marcasite 20, blende 10	
167½	170	No recovery	
170	172½	Gray marcasite-speckled dolomite, marcasite 40, blende 5	BLUE - 172.5'
172½	175	Gray clay and gray dark-speckled dolomite, marcasite 80, few specks of blende	
175	177½	Gray dark-speckled dolomite and gray clay, some fossils, marcasite 75, blende (?)	
177½	180	Brown fossiliferous dolomitic limestone, marcasite 15, blende 2	OILROCK - 177.5'
180	182½	Brown fossiliferous dolomitic limestone and tan fossiliferous limestone, marcasite 25, blende 4	
182½	185	Brown-gray fossiliferous limestone, green clay 90-10, marcasite 30, blende 8	CLAY - 184.7' *
185	187½	Brown dolomitic limestone, marcasite 12, blende 3	GLASS - 185.0' *
187½	190	Dark brown and tan limestone, marcasite 18, blende 7	McGREGOR - 190.5'
190	192½	Gray dolomitic limestone, brown limestone and tan limestone, 80-20, marcasite 9, blende 4	
192½	195	Gray dolomitic limestone, brown limestone 90-10, calcite 3, marcasite 3, blende 1	
195	197½	Gray dolomitic limestone, brown limestone 95-5, marcasite 2, blende 7/10	

Continued

Lafayette County
~~Sec. [illegible] No. 151~~

~~Serial No. 148~~
Hole No. 15 (Continued)
Collar Elevation: 954.30'
Depth of Hole: 197.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/23/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Water table: 33'

Depth From	Depth To	Remarks
		I believe the mineralization below 177½ is ravelling.
		*See driller's remarks for thickness of claybed.
		Driller's Remarks:
140	175	Broken ground and lost most cuts
175	185	Soft ground
183	186½	Claybed

Depth From	Depth To	ZnS	Assays FeS_2	PbS
150	155	17.05	10.27	0.12
155	157½	10.75	12.84	0.12
157½	160	27.25	14.55	0.17
160	162½	4.25	7.70	0.12
162½	165	29.25	8.14	0.12
165	167½	6.20	15.83	0.15
170	172½	5.00	32.10	0.12
172½	175	1.45	52.21	0.13
175	177½	0.70	35.95	0.12
177½	180	0.70	19.47	0.12
180	182½	1.00	18.19	0.12
182½	185	1.45	16.26	0.12
187½	190	3.10	13.00	0.32

Lafayette County
~~Sec. [illegible] f. 151~~

~~Serial No. 149~~
Hole No. 16
Collar Elevation: 950.11'
Depth of Hole: 184.3' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed:
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	30	Buff dolomite, speck of marcasite	
30	40	Buff dolomite, speck of limonite	
40	45	Buff dolomite	
45	50	Gray-brown dolomite and buff dolomite 65-35, few specks dark brown chert, speck of blende	
50	55	Brown dolomite, light gray and white chert 92-8, marcasite 3/10, few specks of blende	DRAB - 50'
55	60	Brown dolomite, gray and marcasite-speckled chert 95-5, marcasite 5, blende 2/10	
60	70	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, marcasite 5, blende 2/10	
70	80	Brown dolomite, brown-gray chert 97-3, marcasite 1, trace of blende	
80	90	Brown gray dolomite, light gray and white chert 75-25, marcasite 1, blende 1/10	
90	100	Brown dolomite, gray-brown chert 99-1, marcasite 6/10, blende 1/10	
100	110	Brown dolomite, gray-tan chert 99-1, marcasite 7/10, trace of blende	
110	120	Brown dolomite, gray and tan chert 90-10, marcasite 2, few specks of blende	
120	125	Dark brown marcasite-speckled dolomite, few specks of chert, few specks of calcite, marcasite 10, few specks of blende	
125	130	Dark brown dolomite, marcasite-speckled chert 60-40, marcasite 30, blende 1(?)	
130	135	Fine cuts: Brown dolomite, gray marcasite-speckled chert and tan chert 90-10, trace of dark gray cave clay, marcasite 15, blende 2/10	
135	140	No recovery	
140	145	Gray dolomite and brown dolomite 90-10, marcasite 10, few specks of blende	GRAY - 140.5'
145	147½	Gray dolomite, marcasite 7	
147½	150	Small recovery: Gray dolomite, marcasite 12, speck of blende	
150	152½	Gray dolomite, marcasite 9, blende 5	
152½	155	Small recovery: Brown-gray dolomite, marcasite 12, blende 3	
155	157½	Small recovery: Brown-gray dolomite, marcasite 5, blende 1	
157½	160	No recovery	BLUE - 157.5'
160	162½	Gray dark speckled dolomite, marcasite 20, blende 2	
162½	165	Gray dark speckled dolomite, gray clay 1, marcasite 60, blende 4	
165	167½	Pale brown fossiliferous dolomitic limestone, few specks dark gray speckled dolomite, marcasite 20, blende 4	OILROCK - 165'
167½	170	Pale brown fossiliferous dolomitic limestone and dark brown shaly limestone, marcasite 15, blende 3	
170	172½	Gray clay, brown fossiliferous dolomitic limestone 95-5, marcasite 3, blende 1/2	CLAY - 170.1'
172½	175	Bentonite	
175	177½	Light brown dolomite, dark brown dolomite 90-10, calcite 1 marcasite 30, blende 5	GLASS - 175'
177½	180	Light brown dolomite, marcasite 25, blende 4	

Continued

Lafayette County
~~Sec. [illegible] of. 151~~

~~Serial No. 149~~
Hole No. 16 (Continued)
Collar Elevation: 950.11'
Depth of Hole: 184.3' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed:
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
180	182½	Very small recovery: Light brown dolomite, few coarse cuts of dark brown shale, marcasite 20, blende 4
182½	185	Gray dolomitic limestone, light brown dolomite 95-5, marcasite 7, blende 1.5

McGREGOR - 182.6'

Water table: 28'

Depth From	Depth To	Remarks
		Driller's Remarks:
120	160	Broken ground; lost most of cuttings
135	140	Lost all cuts
157½	160	Lost all cuts
160	170	Soft ground
171½	175	Claybed
180	182½	Lost practically all of cuts. Strong water.

L. J. Brown

It is doubtful that the mineralization below 185' is in place. I think it is ravelling.

H. W. Davis

Depth From	Depth To	Assays ZnS	FeS2	PbS
125	130	0.15	9.41	Trace
130	135	0.45	16.90	Trace
150	152½	7.75	9.63	Trace
152½	155	1.62	7.06	Trace
155	157½	1.40	7.06	Trace
160	162½	1.30	26.75	Trace
162½	165	2.55	42.58	Trace
165	167½	0.25	28.24	0.13
167½	170	1.40	20.50	0.12
170	172½	0.10	16.69	0.13
172½	175	0.30	17.54	Trace
175	177½	2.80	25.89	Trace
177½	180	0.05	16.26	Trace
180	182½	1.60	25.46	Trace
182½	185	0.45	9.63	Trace

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 150~~
Hole No. 17
Collar Elevation: 957.12'
Depth of Hole: 191.5 (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 10/30/1953
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Buff clay	
10	20	Dark buff dolomite, few specks of limonite	
20	30	Dark buff dolomite, speck of limonite	
30	40	Buff dolomite, speck of limonite	
40	45	Buff dolomite, few specks of marcasite	
45	50	Buff dolomite, brown dolomite 70-30, few specks of marcasite	
50	55	Gray-brown dolomite, (few coarse cuts), few specks of marcasite	
55	60	Gray-brown dolomite, buff dolomite, brown chert 60-38-2, few specks of marcasite	DRAB - 57.5'
60	65	Brown-buff dolomite, gray-brown chert 92-8, marcasite 2/10	
65	70	Brown dolomite, gray-brown and tan chert 90-10, marcasite 7	
70	75	Brown dolomite, gray, brown and marcasite-speckled chert 93-7, marcasite 4	
75	80	Brown dolomite, gray and tan chert 91-9, marcasite 2	
80	90	Pale brown dolomite, light gray and white chert 92-8, marcasite 2	
90	100	Pale brown dolomite, light gray and white chert 92-8, marcasite 1	
100	110	Pale brown dolomite, gray and tan chert 94-6, marcasite 1/2	
110	120	Brown dolomite, tan chert 93-7, marcasite 1, speck of galena	
120	130	Brown dolomite, tan chert 99-1, marcasite 1/2	
130	135	Brown dolomite, marcasite-speckled chert 92-8, marcasite 10	
135	140	Brown dolomite, marcasite-speckled chert 85-15, marcasite 20	
140	145	Brown dolomite, gray and marcasite-speckled chert 60-40, marcasite 15	
145	150	Gray dolomite, brown dolomite 70-30, marcasite 7	GRAY - 146.5'
150	155	Gray dolomite, marcasite 2	
155	157½	Brown-gray dolomite, marcasite 4	
157½	160	Brown-gray dolomite, marcasite 3	
160	162½	Brown-gray dolomite, dark gray dark-speckled dolomite 60-40, gray clay 1, marcasite 2	BLUE - 161.5'
162½	165	Gray dark-speckled dolomite, specks of calcite, marcasite 1, specks of blende	
165	167½	Gray dark-speckled dolomite, trace of calcite, marcasite 2, trace of blende	
167½	170	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 90-10, calcite 3, marcasite 2, thin trace of blende	OILROCK - 169.8'
170	172½	Brown fossiliferous dolomitic limestone, marcasite 2, blende 1/2	
172½	175	Brown fossiliferous dolomitic limestone, marcasite 1, blende 4/10	
175	177½	Brown fossiliferous limestone, marcasite 3/10, blende 1/10	
177½	180	Brown fossiliferous limestone, gray clay 95-5, marcasite 1, blende 1/10	CLAY - 179'
180	182½	Gray-brown fossiliferous limestone, pale green clay 80-20, marcasite 2/10, few specks of blende, trace of phosphates	GLASS - 182'
182½	185	Coarse cuts: Dark brown dolomite and light brown dolomite 80-20, calcite 5, marcasite 4/10, a speck of blende	
185	187½	Very dark brown dolomitic limestone, chocolate brown shale 90-10, calcite 1, marcasite 2	McGREGOR - 187.5'
187½	190	Gray dolomitic limestone, marcasite 1/10	

Water table: 39'

Lafayette County
~~See Serial No. 151~~

~~Serial No. 151~~
Hole No. 18
Collar Elevation: 971.38'
Depth of Hole: 221.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 11/5/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Buff clay
10	15	Dark reddish-buff clay
15	20	Reddish-buff clay
20	35	Dark buff clay
35	40	Buff dolomite, reddish-buff clay 60-40, speck of limonite
40	45	Buff dolomite, buff clay 90-10, limonite 1
45	50	Coarse cuts: Buff dolomite, trace of limonite
50	55	Coarse cuts: Light buff dolomite, gray clay 95-5, speck of limonite
55	60	Coarse cuts: Light buff dolomite, speck of limonite
60	65	Coarse cuts: Buff dolomite
65	70	Coarse cuts: Dark buff dolomite
70	75	Dark buff dolomite- coarse cuts
75	80	Dark buff dolomite
80	85	Dark buff dolomite and pale buff dolomite, light gray and white chert 95-5, few specks dark brown chert, few specks of limonite DRAB - 82.5'
85	90	Buff dolomite, brown buff, light gray and white chert 92-8, gray and brown cave clay 4, trace of limonite, speck of galena
90	95	No recovery--Lost cuts
95	100	Buff dolomite, brown and buff chert 92-8, trace of galena, thin trace of limonite
100	105	Buff dolomite, buff and brown chert 94-6, few specks of limonite, few specks of galena
105	115	Buff dolomite buff and brown chert 95-5, few specks of marcasite, few specks of galena
115	120	Buff dolomite, white and light gray chert 88-12, speck of marcasite, speck of limonite, speck of galena
120	130	Buff dolomite, white and light gray chert 92-8, few specks of limonite, few specks of galena
130	140	No recovery---lost cuts
140	145	Small recovery: Buff dolomite, tan chert 96-4, trace of dark brown clay
145	155	No recovery---lost cuts
155	160	Small recovery: Buff dolomite, tan and brown-gray chert 94-6, marcasite 1/2, a speck of blende
160	165	Small recovery: Buff dolomite, gray, brown and tan chert 95-5, marcasite 7/10, a speck of blende
165	175	No recovery---lost cuts
175	180	Buffish-brown dolomite, tan, gray and brown chert 92-8, marcasite 4/10
180	185	Buffish-brown dolomite, gray and brown chert 96-4, marcasite 8
185	190	Gray dolomite, considerable ravelling, buff dolomite and chert, marcasite 1/2 GRAY - 185'
190	192½	Gray dolomite, some ravellings, buff dolomite and chert, few specks green shale, marcasite 1/2
192½	195	Gray and brown dolomite, some ravellings of buff dolomite and chert, few specks of green shale, marcasite 4/10
195	197½	Brown-gray calcareous dolomite, marcasite 1/2
197½	200	Brown-gray calcareous dolomite, marcasite 3

Continued

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 151~~
Hole No. 18 (Continued)
Collar Elevation: 971.38'
Depth of Hole: 221.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 11/5/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
200	202½	Gray marcasite-speckled dolomite, gray clay 1, marcasite 20	BLUE - 200'
202½	205	Gray dark-speckled marcasite speckled dolomite, marcasite 18	
205	207½	Gray dark speckled dolomite, few specks of brown chert, trace green clay, marcasite 18	
207½	210	Brown fossiliferous dolomitic limestone and dark brown shale, numerous fossils, marcasite 12	OILROCK - 207.5'
210	212½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 8, trace of blende, specks of phosphate	CLAY - 212'
212½	215	Brown dolomitic limestone and numerous fossils, bentonite 10, marcasite 7, trace of blende	
215	217½	Dark brown dolomite, some fossiliferous ravelling, marcasite 5	GLASSROCK - 215'
217½	220	Dark brown dolomite, trace of chocolate brown shale, marcasite 7	
220	222	Dark brown dolomite, gray dolomitic limestone 50-50, trace of chocolate brown shale, marcasite 8	McGREGOR -221'

Water table: 54'

Depth	Remarks
	Very loose, cavey hole 6½" hole to 176 feet 4 7/8" hole 176 to 222 feet

Lafayette County
~~Sec. [illegible]. 151~~

~~Serial No. 152~~
Hole No. 19
Collar Elevation: 962.74'
Depth of Hole: 200.3' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 11/7/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Buffish brown clay	
6	20	Buff dolomite	
20	30	Rather coarse cuts: Buff dolomite	
30	40	Buff to dark buff dolomite	
40	50	Dark buff dolomite	
50	55	Dark buff limonite-speckled dolomite	
55	60	Dark buff dolomite, few specks of limonite	
60	65	Brown dolomite, dark buff dolomite 60-40, trace of marcasite	
65	70	Brown dolomite, dark brown and gray-brown chert 95-5, marcasite 2/10	DRAB - 67.5'
70	80	Brown dolomite, gray-brown chert 92-8, marcasite 1	
80	90	Brown dolomite, gray-brown chert 94-6, marcasite 2	
90	100	Brown dolomite, brown-gray chert 93-7, marcasite 2	
100	110	Brown-gray dolomite, light gray and white chert 88-12, marcasite 4/10	
110	120	Light brown dolomite, brown-gray chert 94-6, marcasite 6/10	
120	130	Brown dolomite, brown-gray chert 92-8, trace of tan chert, marcasite 7/10	
130	140	Brown dolomite, few specks tan chert, marcasite 2	
140	145	Brown dolomite, few specks tan chert, marcasite 12	
145	150	Brown dolomite, gray chert (slightly marcasite-speckled) and brown chert 70-30, marcasite 5	
150	155	Brown dolomite, brown-gray chert 90-10, marcasite 6	
155	160	Brown dolomite, gray-brown chert 96-4, few specks gray dolomite, marcasite 4	
160	162½	Gray dolomite, marcasite 1	GRAY - 160'
162½	165	Gray to brown-gray dolomite, marcasite 7/10	
165	167½	Brown-gray dolomite, marcasite 8/10	
167½	170	Brown-gray dolomite, marcasite 1/2	
170	172½	Brown-gray dolomite, marcasite 4/10	
172½	175	Gray dark-speckled dolomite, brown-gray dolomite 80-20, marcasite 1/2	BLUE - 173'
175	177½	Gray dark-speckled dolomite, marcasite 3/10	
177½	180	Dark gray dark-speckled dolomite, few specks calcite, marcasite 4/10	OILROCK - 180'
180	182½	Brown dolomitic limestone, few fossils, marcasite 2/10, thin trace of blende	
182½	185	Brown fossiliferous dolomitic limestone, trace of dark brown shale, marcasite 1/10, few specks of blende	
185	187½	Light brown fossiliferous limestone, dark brown dolomitic limestone 90-10, marcasite 1/10, a speck of blende	
187½	190	Gray dark fossiliferous speckled limestone, green clay 60-40, marcasite 2/10, specks of phosphate	CLAY - 189.0'
190	192½	Bentonite and gray fossiliferous limestone, marcasite 2/10	
192½	195	Dark brown dolomitic limestone, chocolate brown shale 95-5, marcasite 2/10	GLASS - 192.5'
195	197½	Brown limestone and dolomitic limestone, gray dolomitic limestone (coarse cuts) 60-40, chocolate brown shale 3, marcasite 1/10	McGREGOR - 196.5'
197½	200	Gray dolomitic limestone, marcasite 3/10	

Water table: 45'

A firm hole all the way

~~Serial No. 153~~
Hole No. 20
Collar Elevation: 950.30'
Depth of Hole: 186.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
~~Sec. Ref. 151~~

Date completed: 11/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown-buff clay	
5	10	Dark buff clay	
10	15	Coarse cuts: Dark buff dolomite, limonite 1/2, some dark buff clay	
15	20	Coarse cuts: dark buff dolomite, limonite 5	
20	25	Coarse cuts: Dark buff dolomite, limonite 2	
25	30	Coarse cuts: Dark buff dolomite, limonite 1	
30	35	Coarse cuts: Buff dolomite, trace of limonite	
35	40	Coarse cuts: Buff and dark buff dolomite, trace of limonite	
40	45	Brown-buff to buff dolomite, trace of limonite and marcasite	
45	50	Fine cuts: Buff dolomite, gray and brown-gray chert 94-6, dark buff clay 1, limonite and marcasite 3, blende 2/10	DRAB - 47.5'
50	55	Brown dolomite, gray and brown chert 91-9, marcasite 5, blende 6/10	
55	60	Brown dolomite, gray-brown and brown chert 85-15, marcasite 5, blende 3/10, trace of limonite ravellings	
60	65	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, limonite 1, marcasite 7, blende 4/10	
65	70	Light brown dolomite, gray-brown chert 98-2, marcasite 1, few specks of blende	
70	80	Gray dolomite, light gray and white chert 90-10, marcasite 7, blende 3/10	
80	90	Gray-brown dolomite, gray chert 92-8, trace of white chert, marcasite 2, blende 1/10	
90	100	Gray-brown dolomite, gray chert 96-4, marcasite 4/10, speck blende	
100	110	Light brown dolomite, tan and gray chert 93-7, marcasite 3/10	
110	120	Brown dolomite, gray and tan chert 96-4, marcasite 1, few specks of blende	
120	130	Brown dolomite, gray marcasite-speckled chert and brown-gray chert 70-30, marcasite 7, blende 2/10	
130	135	Brown dolomite, gray dolomite 80-20, brown-gray and marcasite-speckled chert 4, marcasite 3, trace of blende	GRAY - 134'
135	137½	Gray dolomite, speck of green shale, marcasite 2, trace blende	
137½	140	Gray dolomite, marcasite 3, few specks of blende	
140	142½	Brown-gray dolomite, marcasite 7/10, few specks of blende	
142½	145	Brown-gray dolomite, marcasite 1, few specks of blende	
145	147½	Coarse cuts: Brown-gray dolomite, marcasite 3/10	
147½	150	Brown-gray dolomite, [illegible], speck of calcite, marcasite 4/10	
150	152½	Dark gray dark-speckled dolomite, gray clay 3, marcasite 2/10, speck of blende	BLUE - 150'
152½	155	Dark gray dark-speckled dolomite, marcasite ½, speck of blende, speck of calcite	
155	157½	Dark gray dark-speckled dolomite, marcasite 6/10, few specks of blende, few specks of calcite	
157½	160	Brown fossiliferous dolomitic limestone, few specks gray dark-speckled dolomite, marcasite 1, few specks of blende	OILROCK - 157.5'
160	162½	Light brown and tan fossiliferous limestone, marcasite 7/10, a speck of blende	
162½	165	Brown fossiliferous limestone and dark brown shaly limestone, marcasite 3/10, few specks of blende	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 153~~
Hole No. 20 (Continued)
Collar Elevation: 950.30'
Depth of Hole: 186.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 11/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
165	167½	Brown and dark brown limestone, trace of marcasite, speck of blende	
167½	170	Brown and dark brown limestone, trace of marcasite, speck of blende	
170	172½	Gray and brown-gray dark fossiliferous speckled limestone, green clay 95-5, marcasite 2/10, speck of blende	CLAY - 172.4'
172½	175	Brown limestone, dark gray-fossiliferous limestone 70-30, trace of gray clay, trace of marcasite, speck of blende	GLASS - 173.5'
175	177½	Dark brown dolomitic limestone, trace of chocolate brown shale, trace of marcasite	
177½	180	Dark brown dolomitic limestone andlimestone, trace of chocolate brown shale, trace of marcasite	McGREGOR - 182.0'
180	182½	Brown dolomitic limestone, gray dolomite limestone 80-20, chocolate brown shale 1, marcasite 1/10, speck of blende	
182½	185	Gray dolomitic limestone, brown dolomitic limestone, chocolate brown shale 80-18-2, marcasite 1/10, speck of blende	

Water table: 33'

Depth From	Depth To	Remarks
		Driller's Remarks:
45	50	Broken ground
105	110	Broken ground
130	150	Broken ground
172½	175½	Clay Bed

Lafayette County
~~Sec. of. 151~~

~~Serial No. 154~~
Hole No. 21
Collar Elevation: 985.57'
Depth of Hole: 232.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/7/53
Drilled by: Eagle-Picher Co.,DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Buff dolomite, buff clay 60-40	
10	15	Buff dolomite, buff clay 75-25	
15	20	Coarse cuts: Buff dolomite	
20	40	Buff dolomite, few specks of limonite	
40	50	Buff dolomite, trace of limonite	
50	60	Buff limonite-speckled dolomite, limonite 1/2	
60	70	Dark buff calcareous dolomite, limonite 2/10	
70	80	Dark buff calcareous dolomite, limonite 1/10	
80	85	Dark buff calcareous dolomite, trace of limonite	
85	90	Buff and dark buff calcareous dolomite, few specks limonite	
90	95	Gray-brown dolomite, dark buff dolomite 60-40, trace of calcite, few specks of limonite	
95	100	Buffish-gray dolomite, dark buff dolomite, dark brown chert 90-9-1	DRAB - 98'
100	105	Buffish-gray dolomite, brown chert 95-5, trace of gray chert, trace of limonite	
105	110	Brown-buff dolomite, gray-brown chert 96-4, galena 2/10	
110	115	Gray-brown dolomite, brown-buff dolomite, gray-brown chert 70-25-5, few specks marcasite, few specks of galena	
115	120	Buffish-brown dolomite, tan chert 98-2, few specks of galena, specks of marcasite	
120	130	Buffish-brown dolomite, gray chert 97-3, few specks of galena, specks of marcasite	
130	135	Rather coarse cuts: Gray dolomite, buff dolomite, gray chert 90-5-5, few specks marcasite, specks of galena	
135	140	Fine cuts: Brown-buff dolomite, light gray chert 97-3, trace of galena, few specks of marcasite	
140	145	Buff dolomite, brown chert 92-8, thin trace of galena, trace of marcasite	
145	150	Buff dolomite, gray dolomite, brown chert 95-4-1, few specks of galena, speck of marcasite	
150	160	Buff dolomite, tan chert 99-1, thin trace of limonite, marcasite, thin trace of galena	
160	170	Buff dolomite, tan chert 95-5, marcasite 2/10, few specks galena	
170	180	Brown dolomite, gray marcasite-speckled chert and tan chert 88-12, marcasite 5	
180	185	Brown dolomite, brown-gray chert 90-10, few specks dark brown chert, marcasite 2	
185	190	Brown dolomite, brown-gray chert 90-10, trace of tan and brown chert, marcasite 2	
190	195	Brown dolomite, gray dolomite 80-20, buff clay 1, marcasite 4	GRAY - 194'
195	200	Gray dolomite, buff dolomite 98-2, marcasite 6	
200	202½	Gray dolomite, marcasite 10	
202½	205	Brown-gray dolomite, marcasite 8	
205	210	No recovery - broken ground	
210	212½	Gray dark-speckled dolomite, gray clay 90-10, some brown dolomite and brown-gray chert ravelling, marcasite 6, few specks of blende	BLUE - 210'
212½	215	Gray dark-speckled dolomite, marcasite 10, blende 3/10	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 154~~
Hole No. 21 (Continued)
Collar Elevation: 985.57'
Depth of Hole: 232.6' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/7/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
215	217½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 4	
217½	220	Brown fossiliferous dolomitic limestone, marcasite 7, Blende 9	OILROCK - 217.5'
220	222½	Green clay, brown fossiliferous dolomitic limestone 95-5, marcasite 1 (?), blende 1 (?), few specks of phosphate	CLAY - 220.1'
222½	225	Bentonite and fossils, marcasite 2/10, blende 1/10	
225	227½	Dark brown dolomite and light brown limestone, bentonite 95-5, few specks of chocolate brown shale, marcasite 10, blende 2	GLASS - 226.5'
227½	230	Light brown limestone, marcasite 4, blende 1/10	
230	232½	Gray dark-speckled dolomitic limestone, marcasite 3, blende 4/10	McGREGOR - 230'

Water table: 68'

Depth From	Depth To	Remarks
		Driller's Remarks:
95	115	Loose ground
135	145	Loose ground
170	190	Loose ground
190	215	Broken ground
215	225	Soft ground

6½" hole

Depth From	Depth To	ZnS	Assays FeS_2	PbS
210	212½	0.15	11.55	0.12
212½	215	0.10	14.98	0.12
215	217½	5.35	11.77	0.12
217½	220	5.35	11.12	0.12
220	222½	5.00	8.98	0.12
222½	225	2.75	7.91	0.12

Lafayette County
~~See. Pf. 151~~

~~Serial No. 155~~
Hole No. 22
Collar Elevation: 979.81'
Depth of Hole: 225.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Brown-buff clay	
10	15	Coarse cuts: Dark buff dolomite, trace of limonite and marcasite	
15	20	Rather coarse cuts: Dark buff dolomite and buff dolomite, speck of marcasite	
20	25	Rather coarse cuts: Buff dolomite and dark buff dolomite, speck of limonite	
25	30	Buff dolomite, dark buff clay 60-40, speck of limonite	
30	35	Buff dolomite, dark buff clay 80-20, trace of limonite	
35	40	Buff dolomite, limonite 1/2	
40	50	Buff dolomite, limonite 1/10	
50	60	Buff dolomite, trace of limonite	
60	70	Buff dolomite	
70	75	Buff calcareous dolomite, limonite 1/2	
75	80	Buff dolomite, limonite 10	
80	85	Coarse cuts: Dark buff dolomite, limonite 35	
85	90	Buff dolomite, limonite 60	
90	95	Buff dolomite, dark buff clay, gray-brown & brown chert 90-9-1, limonite 20	DRAB - 93'
95	100	Buffish-brown dolomite, gray-brown and marcasite-speckled chert 94-6, limonite 30, marcasite 1	
100	105	Brown & buffish-brown dolomite, gray chert and marcasite-speckled chert 95-5, limonite 15, marcasite 5	
105	110	Buff dolomite, no chert - limonite 55, dark gray clay 2, trace of brown clay, marcasite 3/10	
110	115	Buffish-brown dolomite, gray chert 90-10, limonite 10, marcasite 4/10	
115	120	Brown-gray dolomite, gray chert 96-4, marcasite 8, limonite 4	
120	125	Pale gray dolomite, light gray and white chert 85-15, marcasite 6, limonite 4	
125	130	Buff dolomite and buffish-brown dolomite, gray and white chert 92-8, marcasite and limonite 2	
130	135	No recovery.	
135	140	Buff dolomite, brown chert 70-30, marcasite 1	
140	145	Buff dolomite, brown & gray chert 88-12, marcasite 2	
145	150	Buff dolomite, brown & gray chert 94-6, marcasite 4	
150	155	No recovery	
155	160	Buff dolomite, gray, tan & brown chert 95-5, marcasite & limonite 1	
160	165	Brown marcasite-speckled dolomite, trace of tan chert, marcasite 5	
165	170	Brown dolomite, gray, & tan chert 60-40, marcasite 3	
170	175	Buffish-brown dolomite, gray & tan chert 80-20, marcasite 3	
175	180	No recovery	
180	185	Brown-buff dolomite (few cuts extra coarse), gray & blue-gray chert 75-25, marcasite 3	
185	190	No recovery	
190	195	Buff dolomite, brown-gray dolomite 90-10, few specks of marcasite	GRAY - 194.5'
195	197½	Buff dolomite, brown-gray dolomite 97-3, few specks dark-speckled dolomite, trace of dolomite, trace of marcasite	

Continued

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Lafayette County
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~~Serial No. 155~~
Hole No. 22 (Continued)
Collar Elevation: 979.81'
Depth of Hole: 225.0' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/11/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
197½	200	Gray dark-speckled dolomite, buff dolomite 70-30, marcasite 1/10	BLUE - 197.5
200	205	No recovery	
205	207½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, some fossils, marcasite 2/10, a speck of blende	OILROCK - 205.5'
207½	210	Coarse cuts: Brown dolomite and dark brown shaly limestone, some fossils, marcasite 1, few specks of blende	
210	212½	Coarse cuts: Dark brown dolomite, green clay 50-50, marcasite 3/10, trace of phosphate	CLAY - 211.3'
212½	215	Bentonite and green shale, dark brown dolomite (coarse cuts) 80-20, marcasite 3/10	GLASS - 214.5'
215	217½	Dark brown dolomite, considerable sloughing from Clay Bed, marcasite 1/2	
217½	220	No recovery	
220	223	Gray dolomitic limestone, dark brown dolomitic limestone 90-10, marcasite 3/10	McGREGOR - 220.3'

Water table: 62'

Lafayette County
Sec. Ref. 151

Serial No. 156
Hole No. 23
Collar Elevation: 983.82'
Depth of Hole: 228.1' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/15/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Buffish brown clay	
10	15	Brown-buff clay	
15	35	Buff clay	
35	40	Buff dolomite, limonite 1	
40	60	Dark buff dolomite, trace of limonite	
60	65	Dark buff dolomite, limonite 1/2	
65	75	Buff dolomite, limonite 1/2	
75	85	Buff dolomite, limonite 2/10, speck of calcite	
85	90	Buff dolomite, trace of limonite, speck of calcite	
90	95	Buff dolomite, brown dolomite 80-20, trace of limonite	
95	100	Coarse cuts: Brown-buff dolomite, brown-buff chert 99-1, limonite 2	DRAB - 98'
100	105	Buff dolomite, buffish-brown chert 95-5, limonite 1	
105	110	Buff dolomite, buff clay, buffish-brown chert 82-10-8, limonite 1, thin trace of galena, (loose ground)	
110	115	Buff dolomite, buffish-brown chert and dark brown chert 88-12, limonite 2/10, few specks of galena (loose ground)	
115	120	Buff dolomite, brown chert 92-8, limonite 3/10, thin trace galena	

Continued

Lafayette County
~~Sec. ef. 151~~

~~Serial No. 156~~
Hole No. 23 (Continued)
Collar Elevation: 983.82'
Depth of Hole: 228.1' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/15/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
120	125	Buff dolomite, buffish-brown chert 95-5, limonite 1/10, few specks of galena	
125	130	Buff dolomite, gray-brown chert 80-20, trace of limonite, specks of galena	
130	140	Buff dolomite, gray-brown chert 85-15, specks of limonite, speck of galena	
140	150	Buff dolomite, gray-brown chert 88-12, few specks of limonite, few specks of marcasite	
150	160	Buff dolomite, gray-brown chert and tan chert 92-8, specks of marcasite	
160	170	Buff dolomite, tan and buff chert 97-3, specks of marcasite	
170	175	Buffish-brown dolomite, gray chert 98-2, trace of brown clay, marcasite 2	
175	180	Brown dolomite, gray, brown & tan chert 75-25, marcasite 5	
180	185	Brown dolomite, gray-blue and tan chert 80-20, marcasite 3	
185	190	Rather coarse cuts: Brown dolomite, marcasite 1	
190	195	Brown-gray dolomite, buff dolomite ravelling 5, marcasite 1/2	GRAY - 190'
195	197½	Brown-gray dolomite, gray clay 98-2, buff dolomite ravelling 3, marcasite 3/10	
197½	200	Brown-gray dolomite, marcasite 4/10	
200	202½	Brown-gray dolomite, marcasite 4	
202½	205	Gray-brown dolomite, marcasite 7	
205	207½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 1/2	BLUE - 205'
207½	210	Gray dark-speckled dolomite, marcasite 5, blende 3/10	
210	212½	Gray dark-speckled dolomite (buff dolomite and clay sloughing 7) marcasite 4, blende 1/10	
212½	215	Brown fossiliferous dolomitic limestone, marcasite 6, blende 5	OILROCK - 212½'
215	217½	Brown fossiliferous dolomitic limestone, trace of brown clay, marcasite 4, blende 2	
217½	220	Brown fossiliferous dolomitic limestone, gray clay 95-5, marcasite 2, blende 1	
220	222½	Green clay, trace of marcasite, blende and phosphate	CLAY - 220'
222½	225	Coarse cuts: Dark brown dolomite, gray clay 95-5, marcasite 1, few specks of blende (Per Driller)	GLASS - 224.0'
225	227½	Brown limestone and dolomitic limestone, gray dolomitic limestone 80-20, marcasite 4, blende 3/10	McGREGOR - 227.0' (Adjusted top 227.5')

Water table: 67'

Depth From	Depth To	Remarks
		Driller's Remarks:
205	225	Soft ground

Depth From	Depth To	ZnS	Assays FeS2	PbS
212½	215	7.65	9.63	0.12
215	217½	4.55	7.91	0.12
217½	220	3.70	9.41	0.12

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Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 157~~
Hole No. 24
Collar Elevation: 977.01'
Depth of Hole: 225.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/18/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	20	Buff clay
20	25	Buff dolomite, few specks of limonite (bouldery)
25	30	Buff dolomite, trace of limonite (bouldery)
30	40	Buff dolomite, limonite 3
40	50	Buff dolomite, limonite 5
50	60	Buff dolomite, limonite 1
60	70	Buff dolomite, trace of limonite
70	80	Buff dolomite (some coarse cuts), few specks of limonite
80	85	Buff dolomite (sample quite muddy with ochre clay), limonite 2, trace of galena
85	90	Coarse cuts: Buff dolomite, brown chert 99-1, limonite (coarse) 8, few specks of marcasite, few specks of galena DRAB - 88'
90	95	Coarse cuts: Buff dolomite, gray-brown chert 96-4, limonite 1, speck of galena
95	100	Coarse cuts: Buff dolomite, dark brown chert and buff chert 80-20, limonite 1, galena 3
100	105	Coarse cuts: Buff dolomite, dark brown chert and buff-brown chert 75-25, limonite 3, galena 1
105	110	Buff dolomite, buff-brown, dark brown & tan chert 90-10, limonite 5, galena 1/2
110	115	Buff dolomite, buff-brown and dark brown chert 93-7, limonite 1, galena 2/10
115	120	Buff dolomite, gray and dark brown chert 95-5, limonite 1/2, trace of galena
120	130	Coarse cuts: Pale buff dolomite, light gray and white chert 92-8, limonite 2/10, galena (ravelling) 1/10
130	135	No recovery
135	140	Buff dolomite, gray chert 98-2, dark buff clay and gray clay 5%, limonite 4, galena 7/10 (ravelling?)
140	145	Buff dolomite, gray and brown chert 92-8, dark buff clay 2, marcasite and limonite 10, trace of galena
145	155	Buff dolomite, gray chert 97-3, marcasite & limonite 12, few specks of galena
155	165	Brown-gray dolomite, light gray chert 95-5, marcasite 20, few specks of galena
165	170	No recovery
170	175	Pale brown-gray dolomite, light gray and white chert and tan chert 88-12, marcasite & limonite 10, few specks of galena
175	180	Practically no recovery - only 4 coarse pieces of pale brown-gray dolomite
180	185	Pale brown-gray dolomite, few specks chert, marcasite 6
185	190	Pale brown-gray dolomite, marcasite 5
190	192½	Light gray dolomite, marcasite 4 GRAY - 190'
192½	195	Gray dolomite, marcasite 3
195	197½	Gray dolomite, marcasite 7
197½	207½	No recovery TOP OF BLUE - 202.5' (?)
207½	210	Gray/dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 1
210	212½	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 98-2, marcasite 10, blende 2 OILROCK - 210'

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~~Serial No. 157~~
Hole No. 24 (Continued)
Collar Elevation: 977.01'
Depth of Hole: 225.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/18/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
212½	215	Brown fossiliferous dolomitic limestone, gray clay 80-20, marcasite 8, blende 3 — TOP OF CLAYBED - 214.5'
215	217½	Bentonite
217½	220	Dark brown dolomitic limestone, trace of calcite, marcasite 5, blende 1/2, a speck of galena — GLASS - 219.0'
220	222½	Light blue and tan limestone, trace of chocolate brown shale, marcasite 7, blende 1/2
222½	225	Gray dolomitic limestone, marcasite 3, blende 1/10, speck of galena — McGREGOR - 222.5'

Water table: 60'

Depth From	Depth To	Remarks
		Driller's Remarks:
79	81	Loose streak
95	207½	Broken and loose
207½	217½	Soft ground

Depth From	Depth To	Assays ZnS	FeS_2	PbS
85	90	0.10	20.11	0.85
90	95	0.10	13.26	0.18
95	100	0.10	15.83	7.09
100	105	0.10	16.26	3.88
105	110	0.10	15.83	3.09
207½	210	1.90	12.41	0.12
210	212½	1.85	10.70	0.13
212½	215	2.25	12.84	0.13

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~~Serial No. 158~~
Hole No. 25
Collar Elevation: 990.68'
Depth of Hole: 240' (Measurement by steel tape)
Location: Clarence P. Ralph

Date Completed: 12/24/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	8	Soil	
8	15	Buff dolomite	
15	40	Buff dolomite & buff clay (coarse cuts)	
40	60	Buff dolomite, specks of limonite	
60	80	Buff dolomite, few specks of limonite	
80	85	Buff dolomite, brown dolomite 95-5, trace of limonite, specks of marcasite	
85	90	Brown dolomite, buff dolomite 90-10, few specks of marcasite	
90	95	Brown dolomite, trace of marcasite	
95	100	Brown dolomite, speck of calcite, marcasite 1/10	
100	105	Buffish-brown dolomite, brown & gray-brown chert 95-5, marcasite 2/10	DRAB - 102.5'
105	110	Buffish-brown dolomite, gray and white chert 80-20, marcasite 2/10, galena traces	
110	115	Brown dolomite (some marcasite-speckled), brown & tan chert 96-4, marcasite 3/10, few specks of galena	
115	120	Buffish-brown dolomite, gray-brown & tan chert 94-6, marcasite 1/2	
120	130	Brown dolomite, tan chert 95-5, marcasite 3/10	
130	140	Buffish-brown dolomite, gray & white chert 80-20, trace of dark brown shale, marcasite 2/10, galena 2/10	
140	150	Light brown-gray dolomite, light gray & white chert 88-12, marcasite 4/10	
150	160	Brown dolomite, gray chert 92-8, marcasite 1/2	
160	170	Buffish-brown dolomite, gray and tan chert 88-12, marcasite 5	
170	180	No recovery	
180	185	Brown dolomite, few specks of tan chert, marcasite 12	
185	190	No recovery	
190	195	Dark brown dolomite, gray marcasite-speckled chert 90-10, marcasite 18	
195	200	Dark brown dolomite, gray and brown chert 94-6, marcasite 20	GRAY - 201.5'
200	205	Gray dolomite, brown dolomite 70-30, marcasite 15	
205	207½	Brown-gray dolomite, marcasite 9	
207½	210	Brown-gray dolomite, marcasite 7	
210	212½	Few extra coarse cuts: Brown-gray dolomite, marcasite 12	
212½	215	Brown-gray dolomite, marcasite 22	
215	217½	Brown-gray dolomite, marcasite 8	
217½	220	Gray dark-speckled dolomite, marcasite 6	BLUE - 217.5'
220	222½	Gray and brown-gray dark-speckled dolomite, marcasite 5	
222½	225	Brown dolomitic limestone, gray dark speckled dolomite 70-30, buff dolomite 10, marcasite 5	OILROCK - 223.3'
225	227½	Brown fossiliferous dolomitic limestone, trace of dark brown shale, trace of gray clay, marcasite 4, blende 2	
227½	230	Brown fossiliferous dolomitic limestone, some brown clay and little gray clay, brown shale 1, marcasite 3, blende 2	CLAY - 231'
230	232½	Green clay, brown fossiliferous dolomitic limestone 60-40, trace of phosphate, marcasite 2, blende 1	
232½	235	Gray clay, dark brown sugary dolomite 80-20, marcasite 3, blende 2/10	GLASS - 234.5'
235	237½	Gray dolomitic limestone, dark brown sugary dolomite 70-30, marcasite 2, blende 2/10	McGREGOR - 235.7'
237½	240	Gray dolomitic limestone, marcasite 4, blende 3/10	

Water table: 73'

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~~Sec. Ref. 151~~

~~Serial No. 158~~
Hole No. 25 (Continued)
Collar Elevation: 990.68'
Depth of Hole: 240' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/24/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Remarks
165	215	Broken ground and small recoveries
		Soft bottom section.

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
225	227½	6.42	14.33	0.12
227½	230	3.75	10.27	0.12
230	232½	3.10	9.84	0.12

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Serial No. 159
Hole No. 26
Collar Elevation: 990.40'
Depth of Hole: 237.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/29/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Buff clay, buff dolomite 95-5
10	15	Buff dolomite (coarse cuts), buff clay 80-20, a speck marcasite
15	20	Buff dolomite (coarse cuts), buff clay 90-10, speck of marcasite
20	25	Buff dolomite
25	30	Dark buff dolomite, few specks of galena
30	35	Dark buff dolomite, few specks limonite, specks of galena
35	40	Dark buff dolomite, few specks limonite, few specks of galena
40	70	Dark buff dolomite, few specks of galena
70	80	Dark buff dolomite, brown-gray dolomite 90-10, few specks galena
80	90	Brown dolomite, few specks of marcasite
90	95	Brown dolomite, trace of marcasite
95	100	Brown dolomite, marcasite 4/10
100	105	Brown dolomite, gray-brown chert 97-3, marcasite 1/2 DRAB - 102.5'
105	110	Dark brown dolomite, gray-brown chert 92-8, marcasite 2/10, galena ½
110	115	Dark brown dolomite, gray marcasite-speckled chert and brown chert 90-10, marcasite 6, galena 2
115	120	Dark brown dolomite, gray marcasite-speckled chert and brown chert 96-4, marcasite 3, galena 1/2
120	125	Brown dolomite, gray chert 98-2, marcasite 3/10, few specks galena
125	130	Brown dolomite, gray chert 95-5, marcasite 3/10, few specks galena
130	140	Brown-gray dolomite, gray & white chert 92-8, marcasite 2/10
140	150	Brown-gray dolomite, gray chert 96-4, marcasite 2/10
150	160	Brown-gray dolomite & brown dolomite, gray chert 99-1, marcasite 1/10
160	170	Brown dolomite, tan chert 98-2, trace of marcasite
170	180	Brown dolomite, gray & tan chert 99-1, marcasite 7/10
180	190	Brown dolomite, gray marcasite-speckled chert 92-8, marcasite 3
190	200	Brown dolomite, tan and brown chert 97-3, marcasite 4

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 159~~
Hole No. 26 (Continued)
Collar Elevation: 990.40'
Depth of Hole: 237.4' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 12/20/53
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
200	205	Gray dolomite, brown dolomite 80-20, marcasite 2	GRAY - 201'
205	207½	Gray dolomite, trace of gray clay, marcasite 4	
207½	210	Gray-brown dolomite, marcasite 3	
210	212½	Brown dolomite, marcasite 1, few specks of blende	
212½	215	Brown dolomite, gray coarse grained dolomite with few dark specks 90-10, some gray chert, apparently ravelling, marcasite 7/10, few specks of blende	BLUE - 214.8'
215	217½	Gray dark-speckled dolomite, some brown dolomite and gray chert ravellings, marcasite 3/10, trace of blende	
217½	220	Gray dark-speckled dolomite, some brown dolomite and gray chert ravelling, gray clay 2, marcasite 4/10, few specks blende	
220	222½	Light brown fossiliferous limestone, marcasite 2/10, blende 1/10	OIL - 220'
222½	225	Brown fossiliferous limestone, brown shaly limestone 90-10, marcasite 6/10, blende 2/10	
225	227½	Brown fossiliferous limestone, brown clay 95-5, marcasite 4/10, few specks of blende, speck of calcite	CLAYBED - 227.5'
227½	230	Green clay	
230	232½	Dark brown dolomite (coarse cuts), green clay 95-5, marcasite 1/10, speck of calcite	GLASSROCK - 231.5' (per driller)
232½	235	Dark brown dolomite and little brown dolomitic limestone, marcasite 2/10, speck of calcite	
235	237	Gray dolomitic limestone, few specks brown dolomite, marcasite 1/10, a speck of blende	McGREGOR - 235'

Water table: 73½'

Depth From	Depth To	Remarks
170	200	Broken ground
215	230	Soft ground

6½ inch hole.

Depth From	Depth To	Assays ZnS	FeS_2	PbS
105	110	Nil	3.63	0.85
110	115	Nil	5.56	0.83

1929

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 160~~
Hole No. 27
Collar Elevation: 992.10'
Depth of Hole: 240.3' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 1/4/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	6	Soil	
6	10	Light buff dolomite, few specks of gray dolomite	
10	20	Light buff dolomite	
20	50	Buff dolomite	
50	85	Dark buff dolomite	
85	90	Dark buff to buffish-brown dolomite, few specks marcasite, blende and galena	
90	95	Dark buff & buffish-brown dolomite, thin trace of marcasite, speck of blende	
95	100	Brown-buff dolomite, marcasite 1/10	
100	105	Brown dolomite, brown chert 95-5, marcasite 1/10	DRAB - 102.5
105	110	Light brown dolomite, white chert 94-6, marcasite 4/10, a speck of blende	
110	120	Brown dolomite, brown and marcasite-speckled chert 93-7, marcasite 2, specks of blende and galena	
120	130	Brown dolomite, brown-gray chert 96-4, marcasite 1, a speck of blende and galena	
130	140	Brown dolomite, light gray chert 95-5, marcasite 1½	
140	150	Gray-brown dolomite, few specks tan chert, marcasite 1/2	
150	160	Gray-brown dolomite, light brown-gray chert 97-3, marcasite 4/10	
160	170	Brown dolomite, tan chert 94-6, marcasite 3/10	
170	180	Brown dolomite, trace of tan chert, marcasite 3/10	
180	190	Brown dolomite, tan chert 96-4, marcasite 2	
190	195	Brown dolomite, tan & brown chert 95-5, marcasite 2	
195	200	Brown dolomite, tan chert 97-3, marcasite 4	
200	205	No recovery	
205	210	Very small recovery: Gray dolomite, gray clay 98-2, marcasite 4	GRAY - 205
210	212½	No recovery	
212½	215	Gray dolomite, marcasite 7	
215	217½	Brown-gray marcasite speckled dolomite, marcasite 10, few specks of blende	
217½	220	Brown-gray dolomite (slightly marcasite-speckled), marcasite 20, blende 1 (?)	
220	222½	Brown-gray dolomite (slightly marcasite-speckled), gray clay 95-5, marcasite 12, blende 1	BLUE - 220
222½	225	Dark brown-gray dolomite (slightly marcasite-speckled), gray clay 3, marcasite 5, blende 2	
225	227½	Dark brown-gray dolomite, brown dolomitic limestone 80-20, (some buff dolomite ravelings), marcasite 6, blende 2	OILROCK - 227.0
227½	230	Light brown fossiliferous dolomitic limestone, trace of brown shale, marcasite 7, blende 2	
230	232½	Light brown fossiliferous dolomitic limestone, brown shale 2, marcasite 4, blende 1	
232½	235	Green clay, marcasite 1/2, few coarse crystals of blende	
235	237½	Dark brown dolomite (coarse cuts) 80-20, marcasite 2/10, speck blende	GLASS - 237
237½	240	Dark brown dolomite, gray dolomitic limestone 90-10, specks calcite, marcasite 5, blende 1/2	McGREGOR - 239.8

Water table: 75'

Continued

193a

~~Serial No. 160~~
Hole No. 27 (Continued)
Collar Elevation: 992.10'
Depth of Hole: 240.3' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
~~Sec. Ref. 151~~

Date completed: 1/4/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
215	217½	0.20	9.20	Trace
217½	220	0.52	18.19	Trace
220	222½	0.82	11.77	Trace
222½	225	1.05	8.56	Trace
225	227½	1.15	7.70	Trace
227½	230	1.12	6.42	Trace
230	232½	0.35	4.06	Trace

Serial No. 161
Hole No. 28
Collar Elevation: 947.26'
Depth of Hole: 170.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
Sec. Ref. 151

Date completed: 1/7/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Buffish brown clay	
10	19	Brown-buff clay	
19	35	Buff dolomite, trace of limonite	
35	40	Brown-buff dolomite, few specks brown chert, a speck of limonite	
40	45	Brown-buff dolomite, brown chert 95-5	DRAB - 40
45	50	Brown-buff dolomite, brown & gray-brown chert 92-8, marcasite 1/10	
50	60	Brown dolomite, gray-brown chert 95-5, marcasite 3/10	
60	70	Brown dolomite, gray chert 94-6, marcasite 2	
70	80	Light gray dolomite, light gray chert 91-9, marcasite 6	
80	90	Light brown dolomite, dark gray and gray-brown chert 88-12, marcasite 5	
90	100	Brown dolomite, gray-brown & gray marcasite-speckled chert 95-5, marcasite 4	
100	110	Brown dolomite, gray & marcasite-speckled chert 97-3, marcasite 6	
110	120	Brown dolomite, dark buff clay, gray & marcasite-speckled chert 90-7-3, marcasite 9	
120	125	No recovery	
125	130	Brown dolomite, gray & marcasite-speckled chert 50-50, marcasite 5	
130	135	Brown dolomite, gray & marcasite-speckled chert 65-35, marcasite 5	
135	140	Gray dolomite, brown dolomite 90-10, marcasite 8	GRAY - 135.5
140	142½	Brown-gray dolomite, marcasite 6	
142½	145	Brown-gray dolomite, marcasite 5	
145	147½	Brown-gray dolomite, gray dark-speckled dolomite 95-5, dark buff clay 3, marcasite 7	
147½	150	Brown-gray dolomite, few specks gray dark-speckled dolomite, trace of dark buff clay, marcasite 8	
150	152½	Gray dark-speckled dolomite, marcasite 12	BLUE - 150'
152½	155	Gray dark-speckled dolomite, gray clay traces, marcasite 8	
155	157½	Brown fossiliferous dolomitic limestone and brown shale, marcasite 10, a speck of galena	OILROCK - 155.0
157½	160	Coarse cuts: Dark brown dolomite (punky), marcasite 4	

Continued

~~Serial No. 161~~
Hole No. 28 (Continued)
Collar Elevation: 947.26'
Depth of Hole: 170.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
~~Sec. Ref. 151~~

Date completed: 1/7/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
160	162½	Green clay, dark brown dolomite 80-20, marcasite 1	CLAY - 160.5
162½	165	Green clay and bentonite, few coarse cuts light brown dolomite, trace of marcasite	
165	167½	Light brown dolomite, gray dolomitic limestone 80-20, marcasite 1/2	GLASS - 165'
167½	170	Brown-gray dolomitic limestone, marcasite 2	McGREGOR -167

Water table: 41'

Remarks

Driller's Report: Broken ground 85 to 155 feet; lost considerable amounts of most cuts

Oilrock and Glassrock are soft

Serial No. 162
Hole No. 29
Collar Elevation: 945.82'
Depth of Hole: 166.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Lafayette County
Sec. Ref. 151

Date completed: 1/9/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	20	Buffish-brown clay	
20	25	Dark buff dolomite, limonite & marcasite 2/10	
25	30	Dark buff dolomite, limonite & marcasite 1/10	
30	40	Dark buff dolomite, trace of limonite	
40	45	Dark buff dolomite & brown dolomite 50-50, gray chert 5, marcasite 1/10	
45	50	Brown & dark buff dolomite, marcasite-speckled chert and brown chert 80-20, marcasite 4	DRAB - 42.5
50	55	Brown dolomite, gray-brown chert 97-3, marcasite 1	
55	60	Buffish-brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 4	
60	65	Brown dolomite, gray marcasite speckled chert 82-18, marcasite 8	
65	70	Brown-gray dolomite, gray marcasite speckled chert 95-5, marcasite 10	
70	75	Gray dolomite, light gray chert 96-4, marcasite 7	
75	80	Brown-gray dolomite, light gray chert 95-5, marcasite 8	
80	90	Brown-gray dolomite, gray chert 95-5, marcasite 8	
90	100	Brown dolomite, tan and marcasite-speckled chert 98-2, marcasite 6	
100	110	Brown dolomite, tan and marcasite speckled chert 97-3, marcasite 8	
110	125	No recoveries	
125	130	Brown dolomite, marcasite-speckled chert and brown chert 85-15, marcasite 1	
130	135	Brown dolomite, gray dolomite 90-10, trace of chert, marcasite 3	GRAY- 134.5
135	137½	Gray dolomite, marcasite 6	
137½	140	Brown-gray dolomite, marcasite 5	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 162~~
Hole No. 29 (Continued)
Collar Elevation: 945.82'
Depth of Hole: 166.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 1/9/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
140	142½	No recovery	
142½	145	Brown-gray dolomite, marcasite 9	
145	147½	Brown-gray dolomite, marcasite 10	
147½	150	Brown-gray dolomite (some coarse cuts), buff clay 3, marcasite 6	
150	152½	Gray dark speckled dolomite, gray clay 70-30, marcasite 8	BLUE - 150
152½	155	Gray dark speckled dolomite, trace of gray clay, marcasite 8	
155	157½	Light brown fossiliferous dolomitic limestone, gray dark speckled dolomite 80-20, marcasite 7	OILROCK - 155.5
157½	160	Green clay, brown fossiliferous dolomitic limestone 60-40, marcasite 4, trace ofphosphate, a speck of blende	CLAYBED - 158.5
160	162½	Bentonite	
162½	165	Light brown dolomite, gray marcasite-speckled dolomitic limestone 80-20, trace of calcite, marcasite 10	GLASSROCK - 162.5 McGREGOR - 164.5

Water table: 39'

Remarks

Adjust "tops" down 1½ feet

Lafayette County
Sec. Ref. 151

Serial No. 163
Hole No. 30
Collar Elevation: 949.27'
Depth of Hole: 169.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 1/13/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	20	Buffish-brown clay	
20	25	Buff dolomite, trace of limonite	
25	30	Buff dolomite, few specks of limonite	
30	35	Buff dolomite	
35	40	Brown-buff dolomite, few specks brown chert	
40	45	Brown-buff dolomite, gray, brown & tan chert 88-12, trace of marcasite, a speck of galena	DRAB - 40
45	50	Dark brown-buff dolomite, dark brown chert 85-15, few specks of limonite and marcasite	
50	60	Brown dolomite, gray chert 93-7, trace of brown chert, marcasite 2/10, trace of galena	
60	65	Brown dolomite, gray chert 96-4, marcasite 2/10	
65	70	Light brown-gray dolomite, light gray and white chert 90-10, considerable buff clay (probably sloughing), trace of marcasite	
70	80	Light brown-gray dolomite (rather coarse cuts), light gray and white chert 93-7, buff dolomite 3, few specks of marcasite	
80	90	Brown-gray dolomite, light gray to gray chert 95-5, marcasite 3/10, some buff clay, probably sloughing	
90	100	Brown dolomite, gray-brown & tan chert 99-1, few specks marcasite	

Continued

1969

Lafayette County
~~Sec. [illegible] T. 151~~

~~Serial No. 163~~
Hole No. 30 (Continued)
Collar Elevation: 949.27'
Depth of Hole: 169.5' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 1/13/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
100	110	Brown dolomite, trace of tan & gray chert, marcasite 1/10	
110	120	Brown dolomite, gray marcasite-speckled chert 92-8, rusty clay 1, marcasite 5	
120	125	Brown dolomite, gray-brown & marcasite speckled chert 80-20, marcasite 2	
125	130	Brown dolomite, few specks gray-brown chert, marcasite 2/10	
130	135	Brown-gray dolomite, marcasite 1/2	GRAY - 130
135	137½	Brown-gray dolomite, marcasite 2/10	
137½	140	Brown-gray dolomite (coarse cuts), trace of marcasite	
140	142½	Gray-brown dolomite, marcasite 1/10	
142½	145	Gray-brown dolomite, trace of gray clay, marcasite 2/10	
145	147½	Dark gray dark speckled dolomite, marcasite 1/10	BLUE - 145
147½	150	Dark gray dark speckled dolomite (coarse cuts), marcasite 1/10	
150	152½	Brown dolomitic limestone, gray dark speckled dolomite 97-3, marcasite 1/10, a speck of blende	OILROCK - 150.0
152½	155	Coarse cuts: Dark brown dolomitic limestone, few fossils, marcasite 1/10, a speck of blende	
155	157½	Brown dolomitic limestone, gray dark fossiliferous speckled dolomitic limestone 90-10, marcasite 2/10, few specks blende	
157½	160	Gray clay & brown-gray dark fossiliferous-speckled dolomitic limestone, marcasite 3/10	CLAYBED - 157.5
160	162½	Gray clay, light brown dolomite 60-40, (coarse cuts), marcasite 2/10	
162½	165	Light brown dolomite, marcasite 1/10	GLASSROCK - 161.5
165	167½	Light brown dolomite, few specks chocolate brown shale, calcite 2, marcasite 2/10	
167½	170	Brown dolomite, gray dolomitic limestone 60-40, marcasite 2/10	McGREGOR - 169.0

Water table: 42'

1929

Lafayette County
~~Sec. [illegible] No. 151~~

~~Serial No. 164~~
Hole No. 31
Collar Elevation: 940.20'
Depth of Hole: 160.7' (Measurement by steel tape)
Location: Clarence P. Ralph

Date completed: 2/4/54
Drilled by: Eagle-Picher Co., DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	14	Buffish brown clay	
14	20	Buff dolomite	
20	25	Brown-buff dolomite	
25	30	Brown-buff dolomite, gray chert 95-5	DRAB - 27.5
30	35	Buffish-brown dolomite, gray chert 96-4, trace of marcasite	
35	40	Brown dolomite, gray chert 94-6, few specks brown and tan chert, marcasite 1/10	
40	50	Brown dolomite, gray and tan chert 97-3, trace of marcasite	
50	60	Gray dolomite, white chert 92-8, trace of marcasite	
60	70	Brown-gray dolomite, white chert 93-7, few specks of marcasite	
70	80	Gray-brown dolomite, gray chert 92-8, trace of rusty brown clay, trace of buff dolomite, thin trace of marcasite	
80	90	Brown dolomite, tan chert 95-5, marcasite 1/10	
90	100	Brown dolomite, tan chert 99-1, marcasite 3/10	
100	110	Dark brown dolomite, marcasite speckled chert 75-25, rusty clay 1, marcasite 2	
110	115	Dark brown dolomite, brown-gray chert 98-2, marcasite 1	
115	120	Gray dolomite, marcasite 3/10	GRAY - 115
120	122½	Gray dolomite, marcasite 2/10	
122½	125	Brown-gray dolomite, trace of rusty clay, marcasite 1/10	
125	127½	Brown-gray dolomite, marcasite 1/10	
127½	130	Gray dark speckled dolomite, brown-gray dolomite 60-40, trace of marcasite	BLUE - 128.5
130	132½	Dark gray dark speckled dolomite, marcasite 1/10	
132½	135	Gray dark speckled dolomite, marcasite 4/10	
135	137½	Brown dolomitic limestone, gray dark speckled dolomite 90-10, marcasite 2/10	OILROCK - 135.3
137½	140	Brown dolomitic limestone, dark brown shale 90-10, marcasite 2/10	
140	145	Brown dolomitic limestone, marcasite 1/10	
145	147½	Brown dolomitic limestone, gray dolomitic limestone with dark specks 70-30, trace of marcasite	
147½	150	Dark gray fossiliferous limestone and green shale, brown-gray dolomite 80-20, marcasite 1/10	CLAY - 148
150	152½	Coarse cuts: Dark brown dolomite, specks of calcite, marcasite 1/10	GLASS - 150
152½	155	Coarse cuts: Dark brown dolomite, specks of calcite, marcasite 1/10	
155	157½	Brown dolomite, chocolate brown shale 95-5, marcasite 1/10	
157½	160	Gray dolomitic limestone, brown dolomite 98-2, trace of marcasite	McGREGOR - 157.5

Water table: 31'

1989

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 94~~
Hole No. 6
Collar Elevation: 983.46'
Depth of Hole: 193.2' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/10/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black & brown soil	
5	10	Buff clay	
10	15	Light buff dolomite (Coarse Cuttings), buff clay 95-5, few specks limonite	
15	20	Light buff dolomite (Coarse Cuttings), buff clay 98-2, trace limonite	
20	30	Brown-buff dolomite (some coarse cuttings), trace limonite	
30	40	Pale brown-buff dolomite, trace limonite	
40	45	Pale brown-buff dolomite, few specks limonite	
45	50	Buff dolomite, few specks light gray chert, few specks limonite	DRAB 50
50	55	Brown-buff dolomite, gray & light gray chert 92-8, few specks limonite	
55	60	Brown-buff dolomite, gray & buff chert 91-9, trace limonite	
60	65	Buff dolomite, buff & gray chert, limonite-stained clay 75-20-5, limonite , thin trace galena	
65	70	Buff dolomite, buff & gray chert, limonite-stained clay 75-24-1, limonite 2/10, few specks galena	
70	75	Buff dolomite, gray & buff & white chert 93-7, limonite 1/10	
75	80	Buff dolomite, gray & white chert 95-5, limonite 1/10	
80	85	Pale buff dolomite, gray, white & buff chert 80-20, limonite 2/10	
85	90	Pale buff dolomite, gray, white & buff chert 93-7, trace limonite	
90	100	Buff dolomite, gray & white chert 93-7, trace limonite-stained clay, trace limonite	
100	110	Pale buff dolomite, gray & white chert 88-12, trace limonite, a speck marcasite	
110	115	Pale buff & buff dolomite, gray & white chert 92-8, trace limonite, few specks marcasite	
115	120	Light gray dolomite, white chert 95-5, limonite & marcasite 2, blende 8/10	
120	125	Buff dolomite, white chert 97-3, limonite & marcasite 1, blende 3/10	
125	130	Pale buff & buff dolomite, white chert 98-2, limonite & marcasite 1, few specks blende	
130	140	Brown & buffish-brown dolomite, gray & tan chert 94-6, marcasite 3	
140	145	Brown dolomite, gray chert 95-5, marcasite 4	
145	150	Brown dolomite, trace gray chert, marcasite 6	
150	155	Gray dolomite, few specks calcite, marcasite 2, few specks blende, trace buff dolomitic ravellings	(GRAY 150)
155	157½	Gray dolomite, buff dolomitic ravellings 3, trace limonite-stained clay, marcasite 1½	
157½	160	Brown-gray dolomite, dark buff dolomite 90-10, marcasite 3	

Continued

1996

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 94~~
Hole No. 6 (Continued)
Collar Elevation: 983.46'
Depth of Hole: 193.2' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/10/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
160	162½	Brown-gray dolomite, dark buff dolomite 99-1, marcasite 2½	
162½	165	Gray dolomite, dark buff dolomite 2, marcasite 3	
165	167½	Gray Dark-speckled dolomite, marcasite 2	BLUE 165
167½	170	Gray dark-speckled dolomite, marcasite 2	
170	172½	Gray dark-speckled dolomite, marcasite 1½	
172½	175	Brown dolomitic limestone, gray dark-speckled dolomite 95-5, marcasite 1	OIL 172.6
175	177½	Brown dolomitic limestone, brown shale 90-10, marcasite 1	
177½	180	Dark brown dolomite, marcasite 4/10	
180	182½	Gray & brown-gray dolomite, gray clay 80-20, marcasite 2/10	CLAY 182
182½	185	Gray clay, dark brown dolomite 60-40, marcasite 2/10	GLASS 184
185	187½	Gray dolomitic limestone, dark brown dolomite 60-40, trace dark brown shale, marcasite 3/10	McGREGOR 186
187½	190	Gray dolomitic limestone, marcasite 2/10	
190	192½	Gray dolomitic limestone, marcasite 1/10	

Water table: 58'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
115	120	1.30	2.60	nil.

2.009

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 95~~
Hole No. 7
Collar Elevation: 990.27'
Depth of Hole: 218.2' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown soil	
5	10	Buff clay	
10	15	Buff dolomite (coarse), buff clay 95-5, few specks limonite & marcasite	
15	20	Light buff dolomite (coarse), few specks limonite & marcasite	
20	30	Light buff dolomite (coarse), few specks limonite	
30	60	Buff dolomite (some coarse cuttings)	
60	70	Pale buff dolomite	
70	75	Pale buff dolomite, trace limonite	
75	80	Light buff dolomite, limonite 1/10	
80	85	Light buff dolomite, limonite 2/10	
85	90	Buff & light buff dolomite, limonite 2/10	
90	95	Buff & light buff dolomite, trace calcite, limonite 3/10, few specks marcasite	
95	100	Gray dolomite, buff dolomite 96-4, trace calcite, thin trace limonite & marcasite	
100	105	Gray dolomite, gray & white chert 92-8, marcasite 2	DRAB 102
105	110	Pale brown-gray dolomite, white chert 95-5, trace light green shale, marcasite 3, few specks blende	
110	115	Pale brown-gray dolomite, white chert 97-3, marcasite 8	
115	120	Pale brown-gray dolomite, gray & white chert 80-20, marcasite 6/10	
120	130	Pale brown-gray dolomite, gray & white chert 94-6, few specks light green shale, marcasite ½, a speck blende	
130	140	Pale brown-gray dolomite, white chert 93-7, marcasite 9/10	
140	150	Pale brown-gray dolomite, white chert 96-4, few specks light green shale, marcasite 2	
150	155	Pale brown-gray dolomite, white chert 99-1, marcasite 11	
155	160	Pale brown-gray dolomite, white 92-8, marcasite 9, few specks blende	
160	165	Pale brown-gray dolomite, white chert 94-6, marcasite 7	
165	170	Pale brown-gray dolomite, few specks white chert, marcasite 6	
170	175	Pale brown-gray dolomite, light gray dolomite 90-10, trace green shale, few specks white chert, marcasite 9/10	GRAY 174½
175	180	Light gray dolomite, trace green shale, marcasite 2	
180	185	Pale brown-gray dolomite, white chert 1, marcasite 4½	
185	190	Pale brown-gray dolomite, white chert 1, trace green shale, marcasite 2½	
190	195	Gray dolomite with few dark specks, marcasite 4	BLUE 190
195	200	Pale brown-gray dolomite with few dark specks 60-40, marcasite 1, massive dolomite	OIL 197
200	205	Brown & pale brown dolomite, marcasite 1	
205	207½	Gray-brown dolomite, green shale & clay, dark gray fossiliferous limestone 60-30-10, few specks phosphate, marcasite 4/10	CLAY 206½
207½	210	Gray-brown dolomite, marcasite 2/10	GLASS 207½
210	212½	Dark brown dolomite, marcasite 3	

Continued

Lafa[illegible]tte County
~~Sec. Ref. 151~~

~~Serial No. 95~~
Hole No. 7 (Continued)
Collar Elevation: 990.27'
Depth of Hole: 218.2' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
212½	215	Gray dolomitic limestone, dark brown dolomite 60-40, dark brown shale 1, marcasite 1	McGREGOR 213½
215	217½	Brown-gray dolomitic limestone, marcasite 5/10	

Apparently should have been chert at 70 ft. but none detected until 100 to 105. Very difficult to detect any variation of colors - all seemed so pale & colorless that driller did not start the half runs until in the Oil rock formation. H.W. Davis

Water table: 63'

2029

Lafayette County
Sec. Ref. 151

~~Serial No. 96~~
Hole No. 8
Collar Elevation: 977.75'
Depth of Hole: 206.3' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/30/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Chum

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Brown clay	
10	15	Coarse cuttings: Buff dolomite-buff clay 90-10, trace limonite	
15	20	Coarse cuttings: Buff dolomite-trace limonite	
20	25	Buff dolomite-limonite 1/10	
25	30	Buff dolomite-limonite 2/10	
30	50	Coarse cuttings: Buff dolomite-limonite 1/10	
50	60	Light brown/buff dolomite-dark limonite/speckled buff dolomite 95-5, few specks limonite	
60	65	Pale buffish/brown dolomite-trace dark buff dolomite-few specks limonite	
65	70	Brown/buff dolomite	
70	75	Buffish/brown dolomite	
75	80	Buffish/brown dolomite-white & light gray chert 75-25	DRAB 75
80	85	Buff dolomite-white, gray & buff chert 80-20, limonite 7	
85	90	Buff dolomite-white, gray & buff chert 82-18, limonite 1	
90	95	Pale buff dolomite-white & gray chert 93-7, limonite ½	
95	100	Buff dolomite-white & gray chert 95-5, limonite 1/10	
100	105	Buffish/gray dolomite-light gray chert 70-30, trace limonite (few coarse cuttings)	
105	110	Gray dolomite-gray & white chert 97-3, limonite & marcasite 1/10 few specks blende	
110	115	Gray dolomite-white chert 92-8, marcasite 8/10, blende 1/10	
115	120	Gray dolomite-white chert 96-4, marcasite 1, blende ½	
120	125	Pale brown/gray dolomite-white chert 99-1, marcasite 2/10, trace blende	
125	130	Pale gray dolomite-few specks white chert, marcasite 2	
130	135	Pale brown/gray dolomite-white chert (some marcasite/speckled) 96-4, marcasite 7	
135	140	Pale gray dolomite-white & gray chert 85-15, marcasite 3, a speck blende	
140	145	Pale gray dolomite-white & gray chert 87-13, marcasite 4	
145	150	Pale gray dolomite-white chert 97-3, marcasite 2	
150	155	Dark gray dolomite-marcasite 3	GRAY 150
155	160	Gray dolomite-marcasite 2	
160	165	Brown/gray dolomite-trace calcite, marcasite 2	
165	167½	Pale gray dolomite-trace calcite, marcasite 5	
167½	170	Pale gray dolomite-dark gray dark/speckled dolomite 80-20, marcasite 1	BLUE 169½
170	172½	Gray dark/speckled dolomite-marcasite 6/10	
172½	175	Dark gray dark/speckled dolomite-marcasite ½	
175	177½	Dark gray dark/speckled dolomite-brown dolomite 60-40, marcasite 3/10	OIL 176½
177½	180	Pale gray dolomite-brown dolomite 70-30, trace brown shale, marcasite 2	
180	185	Brown dolomite-dark brown shale ½, marcasite 6/10	
185	187½	Brown dolomite-trace dark brown shale, marcasite 2/10	
187½	190	Brown dolomite-gray dark/speckled dolomite 70-30, marcasite 3/10 trace gray clay	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 96~~
Hole No. 8 (Continued)
Collar Elevation: 977.75'
Depth of Hole: 206.3' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 12/30/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
190	192½	Gray/brown dolomite & dark gray fossiliferous limestone 60-40, marcasite 1/10	CLAY 191½
192½	195	Dark brown dolomite-trace marcasite	
195	197½	Dark brown dolomite,-marcasite 1/10	
197½	200	Brown dolomite-trace gray & green shale-marcasite 15	McGREGOR 200.2
200	202½	Gray fine grained dolomite-brown dolomite 95-5, trace gray shale, few specks green shale, marcasite 8	
202½	205	Gray fine grained dolomite-gray (bentonite) shale 85-15, marcasite 5	
205	206	Gray fine grained dolomite-gray (bentonite) shale 95-5, marcasite 5	

Water table: 55'

2079

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 97~~
Hole No. 9
Collar Elevation: 984.38'
Depth of Hole: 206.6' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 1/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown soil	
5	10	Brown clay	
10	15	Buff dolomite, brown clay 90-10, trace gray shale	
15	20	Buff dolomite (Coarse cuttings)	
20	25	Buff dolomite (Few Coarse cuttings), few specks marcasite	
25	30	Buff dolomite (Coarse cuttings), a speck limonite & marcasite	
30	35	Buff dolomite (Coarse cuttings) (Sample contaminated by introducing boulders in an attempt to straighten a crooked hole.)	
35	40	Buff dolomite (Coarse cuttings), a speck limonite	
40	45	Light buff dolomite, a speck limonite	
45	50	Light buff & buff dolomite, few specks limonite	
50	85	Brown-buff dolomite, few specks limonite	
85	90	Brown-buff dolomite, light gray & white chert 93-7, trace limonite	DRAB - 87½
90	95	Light buff & buff dolomite, white chert 92-8, some brown clay sloughing	
95	100	Pale buff dolomite, white chert 94-6, limonite 1/10	
100	105	Pale buff dolomite, white chert 99-1, trace limonite-stained clay, limonite 2/10	
105	110	Pale buff dolomite, white chert 85-15, limonite 2/10, marcasite 1/10	
110	120	Pale buff dolomite, light gray & white chert 80-20, limonite 3/10, marcasite 1/10	
120	130	Pale buff dolomite, white chert 93-7, limonite 2/10, marcasite 1/10	
130	135	Pale buff dolomite, white chert 98-2, limonite-stained clay 1, limonite 3/10, trace marcasite	
135	140	Light gray dolomite, white chert 92-8, marcasite 5	
140	145	Light gray dolomite, white chert 88-12, marcasite 1	
145	150	Light gray dolomite, white chert 80-20, marcasite 6/10	
150	155	Light gray dolomite, white chert 99-1, marcasite 4/10 (Few coarse cuttings) a few coarse cuttings of buff dolomite	
155	160	Light gray dolomite (some cuttings light green shade), buff dolomite 80-20, trace ochre clay, marcasite 2/10	
160	165	Light gray dolomite (some cuttings light green shade), buff dolomite 97-3, marcasite 3/10	GRAY - 160?
165	170	Gray & brown-gray dolomite, marcasite 2/10	
170	172½	Brown-gray dolomite, marcasite 1/10	
172½	175	Gray dolomite, gray dark-speckled dolomite 90-10, marcasite 2/10	BLUE 174.8
175	180	Gray dark-speckled dolomite, marcasite 3/10	
180	182½	Dark gray dark-speckled dolomite, marcasite 2/10	
182½	185	Brown dolomite, trace calcite, marcasite 5/10	OIL 182.5
185	187½	Rather dark brown dolomite, trace calcite, marcasite 7/10	
187½	190	Rather dark brown dolomite, dark brown shale 98-2, marcasite 1	
190	192½	Rather dark brown dolomite, marcasite 4/10	CLAY - 194½
192½	195	Brown dolomite, light gray clay 80-20, trace gray dark-speckled dolomite, marcasite 1	
195	197½	Green clay, gray dark-speckled fossiliferous limestone 90-10, marcasite 3/10	

Continued

Lafayette County
~~Sec. Ref. 151~~

~~Serial No. 97~~
Hole No. 9 (Continued)
Collar Elevation: 984.38'
Depth of Hole: 206.6' (Measurement by steel tape)
Location: Clarence J. Busch

Date completed: 1/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
197½	200	Brown-gray dolomite, light gray clay 95-5, marcasite 2/10 (dolomite resembled McGregor) GLASS - 198?
200	202½	Dark brown dolomite, chocolate brown shale 99-1, marcasite 10
202½	205	Gray dolomite limestone, dark brown dolomite 90-10, marcasite 4/10
205	206	Gray dolomitic limestone, marcasite 3/10

Water table: 59'

Note: Driller had considerable trouble with the start of this hole. He thinks it might possibly be an old lead shaft that was filled in. Seemed to be uncolidated boulders to 40 feet. Had to case it. Hole was quite crooked.

2060

Lafayette County
~~Sec. Ref. 210~~

Serial No. 31
Hole No. 10
Collar Elevation: 972.05'
Depth of Hole: 95'
Location: Clarence J. Busch

Date completed: 1/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black & buff soil
5	10	Buff clay
10	15	Brown clay
15	20	Dark brown-buff clay
20	25	Dark brown-buff clay, buff dolomite, brown-gray & buff chert 70-20-10, trace limonite, few specks marcasite
25	30	Extra coarse cuttings: Buff dolomite, gray & buff chert 80-20, few specks limonite
30	35	Coarse cuttings: Buff dolomite, gray & buff chert 60-40, some buff clay, a speck limonite
35	40	Coarse cuttings: Buff dolomite, gray, brown & buff chert 65-35, some buff clay, a speck limonite
40	45	Coarse cuttings: Buff dolomite, brown-buff clay, gray & light buff chert 45-45-10, few coarse limonite scales
45	50	Coarse cuttings: Buff dolomite, various colored chert 60-40, few coarse limonite scales
50	55	Coarse cuttings: gray & white chert, buff dolomite 95-5
55	60	Buff dolomite, buff clay & dark gray clay, gray & white chert 50-40-10
60	65	Buff dolomite, white, gray, brown & buff chert 70-30, some buff clay
65	70	Fine cuttings: Buff dolomite, white & buff chert 95-5, little buff clay
70	75	Buff dolomite, buff, white & gray chert 60-40, little buff clay
75	80	Some extra coarse cuttings: Buff dolomite, various colored chert 80-20, a little buff clay
80	85	Fine cuttings: Buff dolomite, white, gray & buff chert 85-15
85	90	Buff dolomite, various colored chert 82-18, few specks limonite (Medium cuttings)
90	95	Coarse cuttings: Buff dolomite, gray, white & buff chert 93-7, few specks limonite

Extremely loose & broken formation. Hole was reamed to 8" diameter so that casing might be set, but could not find any firm enough to case to. Hole was advanced as far as it was possible to do so. Permission to stop the hole was granted by the geolog ist.

2079

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 32~~
Hole No. 11
Collar Elevation: 991.85'
Depth of Hole: 132.5'
Location: Clarence J. Busch

Date completed: 1/16/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Dark buffish-brown clay
10	15	Dark red-brown clay
15	20	Coarse Cuttings: Buff dolomite, brown, tan & dark buff chert 85-15, few specks limonite
20	25	Extra coarse cuttings: Buff dolomite, brown, tan & dark buff chert, red-brown clay 50-45-5
25	30	Coarse cuttings: Buff dolomite, brown, tan & dark buff chert & gray chert 80-20
30	35	Coarse cuttings: Buff dolomite, gray & tan chert 85-15
35	40	Coarse cuttings: & few Extra coarse cuttings: Buff dolomite, brown, gray & dark buff chert 65-35
40	45	Coarse cuttings: Buff dolomite, dark buffish-brown clay, brown, gray & dark buff chert 60-20-20
45	50	Coarse cuttings: Buff dolomite, brown & gray chert 90-10
50	60	Coarse cuttings: Buff dolomite, brown & gray chert 92-8
60	70	Coarse cuttings: Dark buff limonite-speckled dolomite, gray & tan chert 99-1
70	75	Coarse cuttings: Dark buff limonite-speckled dolomite, gray-brown chert 99-1
75	80	Coarse cuttings: Dark buff limonite-speckled dolomite, brown, buff & tan chert 92-8
80	85	Coarse cuttings: Buff & gray-buff limonite-speckled dolomite, brown & tan chert 88-12
85	90	Coarse cuttings: Buff & gray-buff limonite-speckled dolomite, brown & tan chert 90-10
90	95	Coarse cuttings: Buff & gray-buff dolomite, brown & tan chert 95-5
95	100	Coarse cuttings: Buff & gray-buff dolomite, tan & gray-brown chert 96-4 GRAY - 103?
100	105	Coarse & Extra Coarse Cuttings: Buff & gray-buff dolomite, brown, tan & buff chert 95-5
105	110	Medium Cuttings: Buff & gray-buff dolomite, tan, brown & buff chert 96-4
110	115	Medium & Coarse Cuttings: Gray-buff dolomite, brown & tan chert 95-5, trace limonite
115	117½	Medium Cuttings: Gray-buff limonite-speckled dolomite, brown, tan & buff chert 96-4, few specks limonite
117½	120	Dark buff dark-speckled dolomite, buff clay 60-40, trace chert, few fossils BLUE 117½?
120	122½	Dark buff dolomite, buff clay 80-20, trace chert, few fossils
122½	125	Dark brown shaly limestone, brown clay, dark buff dolomite 60-20-20, trace marcasite OIL - 123
125	127½	Green clay, dark buff dolomitic ravellings, few fossils, trace gray shale CLAY - 125

Continued

2089

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 32~~
Hole No. 11 (Continued)
Collar Elevation: 991.85'
Depth of Hole: 132.5'
Location: Clarence J. Busch

Date completed: 1/16/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
127½	130	Green clay & gray shale, dark brown dolomite 60-40, buff dolomitic ravellings 10, trace chocolate brown shale	GLASS - 129
130	132½	Buff dolomitic ravellings, Extra Coarse Cuttings: Gray dolomitic limestone 98-2	McGREGOR - 130

Water table: 62'

Driller's remarks:
Loose ground 17 to 60
Hole was awfully soft from 80-130½
Hard formation 130½-132½

8" hole from collar to 65 feet

209a

Lafayette County
Sec. R[illegible] 152

~~Serial No. 135~~
Hole No. 15
Collar Elevation: 945.60'
Depth of Hole: 161.0'(Measurement by steel tape)
Location: Calvert Estate, Tract #3

Date completed: 7/29/52
Drilled by: Eagle-Picher,DMA
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil & brown clay
5	20	Brown & buff clay, some buff dolomite & chert
20	35	Brown clay, buff dolomite & brown & gray chert 25
35	50	Brown clay, buff dolomite & brown, gray & tan chert 45, few specks limonite
50	60	Buff dolomite-brown, gray & tan chert 85-5, brown clay 10, speck limonite
60	70	Buff dolomite-brown, gray & tan chert 97-3, trace limonite
70	80	Buff dolomite-brown, gray & tan chert 98-2, trace limonite
80	85	Buff dolomite-brown, gray & tan chert 99-1, trace limonite
85	90	Dirty limonite stained buff dolomite, buff dolomite 10, tan chert 3, limonite 1/2
90	100	Dirty limonite stained buff dolomite, buff dolomite 20, tan chert & limonite 1/2
100	110	Yellow buff & light brown dolomite-tan chert 99-1, calcite 2, limonite 1/2
110	115	Buff to brown dolomite, calcite 1/2, trace chert, limonite ½
115	117½	Buff to brown dolomite, trace calcite & chert, trace limonite
117½	120	Dark brown to light brown & buff dolomite, trace limonite
120	122½	Brown dolomite-& light tan dolomite, brown limestone ? 5, (looks like oilrock)
122½	125	Brown & gray brown fossils, dark speckled dolomitic limestone limonite 1/2, limonite stained dolomite 10
125	127½	Light gray/brown fossils, dark/speckled dolomitic limestone, limonite 1/2
127½	130	Light & dark gray, dark/speckled dolomite, buff & brown dolomite, limonite 1/2 OIL 130
130	132½	Brown & tan fossiliferous limestone, buff limonite stained dolomite 10, limonite 1/2
132½	135	Tan limestone, buff limonite stained dolomite 5, limonite 1/10
135	137½	Tan limestone, buff limonite stained dolomite 5, trace limonite, speck marcasite
137½	140	Tan limestone-brown dolomitic limestone 95-5, trace limonite, few specks marcasite
140	142½	Tan limestone-brown dolomitic limestone 90-10, few specks marcasite
142½	145	Light gray/brown fossiliferous limestone, gray/brown shale 5, few specks marcasite GLASS 145
145	147½	Brown & tan fossiliferous limestone, trace green shale & black fossiliferous limestone, specks marcasite
147½	150	Limestone & tan fossiliferous limestone, few specks green shale, specks marcasite
150	152½	tan limestone, trace brown limestone, green shale 1, few specks marcasite
152½	155	Tan limestone, brown limestone 5, green shale 2, few specks marcasite
155	157½	Light brown & pale tan limestone, little brown shale 1, few specks marcasite
157½	160	Gray dolomitic limestone, few specks marcasite Water table: 60'

2169

Lafayette County
~~Sec. P[illegible] 152~~

~~Serial No. 136~~
Hole No. 16
Collar Elevation: 932.79'
Depth of Hole: 148.5' (Measurement by steel tape)
Location: Calvert Estate tract #3

Date completed: 8/1/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	15	Brown & buff clay
15	30	Buff clay, buff dolomite & brown & tan chert 20
30	45	Buff clay, buff dolomite & brown & tan chert 45
45	50	Buff dolomite, tan chert 98-2
50	65	Buff dolomite, brown & tan chert 95-5, few specks limonite.
65	70	Buff dolomite, tan chert 96-4, few specks limonite, (very small recovery.
70	80	Coarse cuttings, dirty buff dolomite & brown clay, trace limonite.
80	90	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 94-6, trace limonite.
90	100	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 90-10, trace limonite.
100	110	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 99-1, trace limonite.
110	112½	Coarse cuttings brown clay, buff dolomite, gray dolomite & gray dark specks dolomite, trace limonite. BLUE 112
112½	115	Gray dark specks dolomite, brown chert & buff dolomite 20, trace limonite.
115	117½	Brown chert 80, gray dark specks dolomite 15, buff dolomite 5, trace limonite.
117½	120	Gray dark specks dolomite, brown chert & buff dolomite 20, trace limonite.
120	122½	Brown & tan limestone, gray dark specks dolomite 80-20, trace limonite, OIL 120½
122½	125	Brown & tan limestone trace limonite, few specks marcasite.
125	127½	Brown & tan limestone trace limonite, few specks marcasite.
127½	130	Brown & tan limestone trace limonite, few specks marcasite.
130	132½	Brown & tan limestone trace limonite, few specks marcasite.
132½	135	Black fossiliferous limestone, green shale & gray clay, brown tan limestone 40-30-30 CLAY 133'
135	137½	Gray & tan fossiliferous limestone, gray clay 80-20, trace green shale, trace marcasite. GLASS 135½
137½	140	Brown & light brown dense limestone, dark brown shale 5, trace marcasite.
140	142½	Brown & light brown dense limestone, dark brown shale 3, trace marcasite.
142½	145	Brown, gray brown & gray dolomite limestone, trace green shale, few specks marcasite.
145	146½	Brown limestone trace dark brown shale, trace green shale, few specks marcasite.
146½	147½	Gray & gray brown dolomite limestone, brown limestone 60-40, trace marcasite. M & G 147'

Water table: 49'

Lafaye[illegible] County
~~Sec. Ref. 152~~

~~Serial No. 137~~
Hole No. 17
Collar Elevation: 942.60'
Depth of Hole: 175.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #3

Date completed: 8/6/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay & soil
5	15	Brown clay & some buff dolomite
15	25	Buff clay, buff dolomite 80-20
25	35	Buff clay, buff dolomite 60-40
35	40	Buff dolomite, specks limonite
40	45	Buff dolomite, trace tan chert, specks limonite
45	50	Buff dolomite, brown & tan chert 97-3
50	60	Buff dolomite, brown & tan chert 96-4
60	65	Buff dolomite, brown & tan chert 95-5, specks marcasite
65	70	Buff dolomite, tan chert 99-1
70	80	Buff dolomite, brown & tan chert 92-8, few specks limonite
80	90	Buff dolomite, brown & tan chert 94-6, few specks limonite
90	100	Buff dolomite, brown & tan chert 96-4, trace limonite
100	110	Buff dolomite, brown & tan chert 93-7, limonite 3
110	115	Buff dolomite, brown & tan chert 97-3, limonite 4
115	120	Buff limonite-stained dolomite, brown & tan chert 96-4, limonite 12
120	130	Buff limonite-stained dolomite, brown & tan chert 97-3, limonite 14, specks marcasite
130	140	Buff limonite-stained dolomite, brown & tan chert 96-4, limonite 10, trace marcasite
140	145	Buff dolomite, gray dolomite 60-40, marcasite 3, limonite 2, trace blende
145	147½	Buff & gray dolomite & brown & tan chert, marcasite 4, limonite 3, trace blende
147½	150	Buff & gray dolomite & brown & tan chert, gray clay 5, marcasite 3, limonite 3, specks blende
150	152½	Buff & gray dolomite & brown & tan chert, gray & brown clay 15 marcasite 4, limonite 2, trace blende
152½	155	Buff dolomite & brown & tan chert, gray dolomite 1, marcasite 4, limonite 1½, trace blende
155	157½	Brown & tan limestone, marcasite ½, limonite ½, trace blende — OIL - 155?
157½	160	Brown & tan limestone, buff dolomite, tan chart 10, marcasite 1, limonite 1, few specks blende
160	162½	Green shale & gray clay, brown & tan limestone 15, buff dolomite, tan chert 20, marcasite 1, limonite ½, few specks blende — CLAY - 160
162½	165	Brown limestone, buff dolomite, gray clay, brown & tan chert, marcasite 1½, trace limonite, specks blende — GLASS - 162
165	167½	Buff & gray dolomite, some brown chert, brown limestone, gray clay, marcasite 3, limonite 2, trace blende
167½	170	Brown chert 60, buff dolomite & gray dolomite 5, trace gray dolomite limestone, marcasite 28, limonite 6, blende 1
170	172½	Gray dolomite limestone, brown chert & buff dolomite 20, marcasite 12, limonite 4, blende ½ — McGREGOR - 170
172½	175	Gray dolomite limestone, brown limestone, gray clay, buff dolomite & brown chert, marcasite 8, limonite 2, trace blende

Water table: 63'

2129

Lafayette County
~~Sec. [illegible] 152~~

~~Serial No. 138~~
Hole No. 18
Collar Elevation: 911.68'
Depth of Hole: 131.5 (Measurement by steel tape)
Location: Calvert Estate Tract #3

Date completed: 8/9/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Brown clay, buff dolomite & tan chert 65.
10	20	Brown clay, buff dolomite & tan chert 20
20	30	Buff clay & dolomite, brown & tan chert 97-3, trace limonite.
30	40	Buff dolomite, gray & tan chert 95-5, limonite & marcasite 1½
40	50	Buff dolomite, gray & tan chert 98-2, limonite & marcasite 2
50	60	Buff dolomite, brown & tan chert 96-4, limonite & marcasite ½
60	70	Buff dolomite, brown & tan chert 90-10, limonite & marcasite 2½
70	75	Buff dolomite, trace brown & gray & tan chert, trace limonite and marcasite.
75	80	Buff dolomite, gray dolomite 50-50, few specks marcasite trace limonite. GRAY 75
80	85	Buff dolomite, gray dolomite 60-40, few specks marcasite, trace limonite
85	87½	Gray dolomite, buff dolomite 70-30, trace limonite, specks marcasite.
87½	90	Gray dolomite, gray dark specks dolomite, buff dolomite 40-40-20 BLUE 89½
90	92½	Gray dark specks dolomite, dirty brown limonite, stud dolomite 40, limonite ½, trace marcasite.
92½	95	Gray dark specks dolomite, buff dolomite 10, trace limonite, few specks marcasite.
95	97½	Dirty brown limonite stained dolomite, few specks marcasite & limonite. (hard)
97½	100	Brown & tan fossiliferous dolomite limestone, trace limonite & marcasite OIL 97½ (hard)
100	102½	Brown & tan fossiliferous dolomite limestone, specks limonite
102½	105	Brown & tan fossiliferous dolomite limestone, (hard)
105	107½	Brown & tan fossiliferous dolomite limestone, trace marcasite few specks marcasite. (Hard)
107½	110	Brown & tan limestone, trace brown shale, trace limonite (hard)
110	112½	Green shale & gray clay, brown limestone 60-40, trace limonite CLAY 111' (soft)
112½	115	Brown limestone, trace gray clay, trace soft brown shale, trace marcasite GLASS 112½
115	117½	No recovery
117½	120	Light brown fossiliferous limestone, trace brown shale, few specks marcasite (hard)
120	122½	Light brown fossiliferous limestone, trace dark brown shale, few specks marcasite (hard)
122½	125	Light brown fossiliferous limestone, some light gray brown brown limestone, specks marcasite (hard)
125	127½	Gray dolomite limestone, light brown fossiliferous 80-20, few specks marcasite
127½	130	Gray & brown dolomite limestone, trace green shale & light brown clay, trace marcasite.

Water table: 35'

213a

Lafayette County
~~Sec. R. 152~~

~~Serial No. 1~~39
Hole No. 19
Collar Elevation: 922.31'
Depth of Hole: 156.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #3

Date completed: 8/13/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	20	Brown clay
20	25	Buff dolomite, brown & tan chert 97-3
25	30	Buff dolomite, brown & tan chert 95-5
30	40	Buff dolomite, brown & gray chert 94-6
40	50	Buff dolomite, brown & gray chert 90-10
50	60	Buff dolomite, brown & pale gray chert 94-6
60	70	Brown-buff clay, buff dolomite, brown & tan chert 60-39-1
70	80	Buff dolomite, buff clay, brown & tan chert 85-12-3, trace limonite
80	90	Buff dolomite, buff clay, brown & tan chert 70-28-2
90	100	Buff dolomite, brown & tan chert 96-4
100	110	Buff dolomite, brown & tan chert 98-2, trace dirty buff dolomite, trace limonite
110	120	Buff & dirty brown dolomite, dark brown & brown-buff clay 20, chert 5, trace limonite
120	125	Buff & dirty brown dolomite, dark brown & brown-buff clay 15, chert 4, trace limonite
125	130	Dirty brown & buff dolomite, brown, black, gray & buff clays 10, chert 4, few specks marcasite, one cut "BLUE" dolomite, few cuts gray-brown dolomite
130	135	Buff & brown dolomite & tan chert, some gray-brown dolomite & gray dark-speckled dolomite, some light brown & dark brown limestone, some dark brown greasy clay, gray clay 10, trace "BLUE" limestone, few specks limonite & marcasite OIL - 130-135
135	137½	Buff & brown dolomite & chert, brown & light brown limestone, brown & gray clay, light brown clay 1, few specks marcasite, trace limonite
137½	140	Brown & light brown flaky fossiliferous limestone, buff dolomite 9, brown & gray clay 10, some tan chert & brown shale, trace marcasite, trace limonite
140	142½	Gray-brown & light brown limestone, trace brown dolomitic limestone, buff dolomite & clay 5, few specks marcasite McGREGOR - 140-142½
142½	145	Light gray & gray-brown limestone, buff dolomite & clay 10, trace chert, few specks marcasite
145	147½	Light gray & gray-brown limestone & dolomitic limestone, buff dolomite & clay 5, trace chert, few specks marcasite & limonite
147½	150	Light gray & gray-brown limestone & dolomitic limestone, buff dolomite & clay 9, trace chert, trace marcasite & limonite
150	152½	Gray & light gray dolomitic limestone, buff dolomite & clay 15, trace marcasite & limonite
152½	155	Gray & light gray dolomitic limestone, buff dolomite & clay 5, trace marcasite & limonite

Water table:

Continued

219a

Lafaye County
~~Sec. Ref. 152~~

~~Serial~~ No. 139
Hole No. 19 (Continued)
Collar Elevation: 922.31'
Depth of Hole: 156.0' (Measurement by steel tape)
Location: Calvert Estate, Tract #3

Date completed: 8/13/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Remarks and Estimated Analyses
60	85	Soft
85	110	Mud seams
110	125	Mud seams, soft
125	135	Soft
135	140	Firm
140	155	Hard

2159

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 140~~
Hole No. 20
Collar Elevation: 948.70'
Depth of Hole: 160.0'
Location: Calvert Estate (Tract #3)

Date completed: 10/20/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Brown soil
15	30	Dark brown clay
30	40	Dark buff clay & ochre clay
40	45	Dark buff clay, brown chert 95-5, trace yellow chert
45	50	Dark buff dolomite, buff clay, brown chert 85-10-5
50	55	Coarse cuttings: dark buff dolomite, gray-brown chert 90-10
55	60	Coarse cuttings: buff dolomite, brown chert 96-4
60	65	Coarse cuttings: buff dolomite, brown & tan chert 92-8
65	70	Coarse & extra coarse cuttings: buff dolomite, brown & tan chert 97-3
70	75	Coarse cuttings: buff dolomite, brown & tan chert 80-20
75	80	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 92-8
80	85	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 90-10
85	90	Coarse cuttings: buff limonite-speckled dolomite, gray-brown chert 88-12
90	95	Coarse cuttings: dark buff dolomite, gray-brown chert 94-6
95	100	Coarse cuttings: dark buff dolomite, gray-brown chert 97-3
100	105	Buff & dark buff dolomite, gray-brown chert 99-1 (some coarse cuttings)
105	110	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 80-20
110	115	Extra coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 90-10
115	120	Coarse cuttings: buff limonite-speckled dolomite, tan & gray-brown chert 92-8
120	125	Extra coarse cuttings: buff limonite-speckled dolomite, gray-brown & tan chert 70-30
125	130	Coarse cuttings: buff limonite-speckled dolomite, gray-brown & tan chert 60-40, trace limonite — GRAY - 125 ?
130	135	Coarse cuttings: dark buff dolomite, brown chert 99-1, gray-buff clay 5, limonite 5, specks marcasite
135	137½	Dark buff dolomite, limonite-stained clay 50-50, gray-brown chert 1, limonite 2, specks marcasite
137½	140	Buff dolomite, gray clay 80-20, gray-brown & tan chert 5, limonite 3, marcasite 2 — BLUE - 137½ ?
140	142½	Gray clay, buff dolomite & gray-brown chert ravellings, limonite & marcasite 1
142½	145	Gray clay & brown clay, some buff dolomitic ravellings, marcasite & limonite 1½ — OIL - 144 ?
145	147½	Brown clay, some buff dolomitic ravellings, marcasite 3
147½	150	Brown clay, trace brown dolomitic limestone, few specks phosphate, marcasite 1
150	152½	Gray clay & brown-buff clay, trace brown dolomite, marcasite 1/10 — CLAY - 149 ?
152½	155	Coarse cuttings: dark brown dolomite, marcasite 1 (some brown chert & buff dolomitic ravellings) — GLASS - 151 ?
155	157½	Coarse cuttings: Mostly buff dolomite & gray-brown chert ravellings, trace brown dolomite, trace gray dolomitic limestone, trace gray clay, marcasite 1, trace limonite
157½	160	Mostly buff dolomite & gray-brown chert ravellings, little gray dolomitic limestone, marcasite ½, limonite 3 (ravelling) — McGREGOR - 157½ ?

Impossible to measure with steel tape due to caving condition of hole.
Very difficult to pick the formation "Tops" with any degree of accuracy.

Water table: 60'

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 162~~
Hole No. 21
Collar Elevation: 935.04'
Depth of Hole: 138.2' (Measurement by steel tape)
Location: Calvert Estate (Tract #3)

Date completed: 1/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Brown clay
10	15	Dark buff dolomite, brown chert 95-5, marcasite 1/10
15	20	Dark buff dolomite, brown & light brown chert 97-3, few specks limonite
20	30	Coarse cuttings: buff dolomite, light brown chert, dark buff chert 94-6, trace limonite
30	35	Coarse cuttings: buff dolomite, brown & dark buff chert 92-8, few specks limonite
35	40	Coarse cuttings: buff dolomite, dark brown & dark buff chert 88-12, trace limonite
40	50	Coarse cuttings: buff dolomite, dark brown & dark buff chert 85-15, trace limonite
50	65	Buff dolomite, brown & buff chert 90-10, trace limonite
65	80	Buff dolomite, brown & buff chert 94-6, trace limonite
80	90	Buff dolomite, brown & buff chert 93-7, trace limonite
90	95	Buff dolomite, brown & buff chert 88-12, marcasite 2/10 (Coarse cuttings) GRAY - 99
95	100	Buff dolomite, brown & buff chert 95-5, few coarse cuttings of gray marcasite-speckled dolomite, marcasite 4
100	102½	Ravellings of buff dolomite & chert, marcasite 1
102½	105	Ravellings of buff dolomite & chert, gray dolomite 1, marcasite 2
105	110	Ravellings of buff dolomite & chert, gray dolomite 5, marcasite 6
110	112½	Ravellings of buff dolomite & chert, trace gray dolomite, marcasite 4
112½	115	Ravellings of buff dolomite & chert, gray clay 20, marcasite 3 BLUE 114½
115	117½	Ravellings of buff dolomite & chert, gray clay & gray marcasite-speckled dolomite 60-40, marcasite 5
117½	120	Gray marcasite-speckled dolomite, buff dolomite & chert ravellings 80-20, few fossils, marcasite 2
120	122½	Gray marcasite-speckled dolomite, buff dolomite 90-10, numerous fossils, marcasite 5
122½	125	Pale brown dolomitic limestone, gray marcasite-speckled chert & buff chert 50-50, marcasite 5 OILROCK - 122½
125	127½	Chert ravellings, gray clay & pale brown clay 50-50, few specks phosphate, few coarse cuttings gray marcasite-speckled dolomite
127½	130	Ravellings from overlying beds, brown dolomitic limestone (Glass) 80-20, marcasite 1 GLASS - 127½
130	132½	Ravellings from overlying beds, brown dolomitic limestone (Glass) 70-30, marcasite 4
132½	135	Gray dolomitic limestone, brown dolomitic limestone & dark brown shale 90-10, some ravellings from overlying beds, marcasite 2
135	138	Gray dolomitic limestone, little ravellings from overlying beds, marcasite 2

Water table: 37½'

Continued

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 162~~
Hole No. 21 (Continued)
Collar Elevation: 935.04'
Depth of Hole: 138.2' (Measurement by steel tape)
Location: Calvert Estate (Tract #3)

Date completed: 1/30/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Hole was very loose; almost impossible to recognize the beds. "Tops" are very unreliable.

Driller's Remarks:

0 - 10	Clay
10 - 45	Soft & cavy
45 - 55	Firm
55 - 95	Cavy
95 - 102½	Soft
102½ - 105	Cavy
105 - 117	Soft
117 - 129	Soft & cavy
129 - 138	Soft

A loose, cavy hole
Struck water at 30'
Strong flow water at 50'
Another flow not so strong at 85'

Lafayette County
~~Sec. [illegible] 210~~

~~Serial No. 1~~
Hole No. 5
Collar Elevation: 1000.42'
Depth of Hole: 126.0' (Measurement by steel tape)
Location: Verna B. Cole, Tract #2

Date completed: 6/16/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff clay
10	15	Brown buff clay, buff dolomite & chert 15
15	20	Brown clay, buff dolomite & chert 10
20	25	Buff dolomite, brown & buff chert 97-3, few specks limonite
25	35	Buff dolomite, buff & tan chert 90-10, limonite ½
35	45	Buff dolomite, brown & tan chert 94-6, trace limonite
45	55	Buff dolomite, brown & tan chert 95-5, a speck limonite
55	65	Brown-buff dolomite, brown & tan chert 98-2, few specks limonite
65	76	Brown-buff dolomite, brown & tan chert 97-3, a speck limonite
75	85	Brown-buff dolomite, brown & tan chert 90-10, few specks limonite
85	95	Brown-buff dolomite, brown & tan chert 99-1, trace calcite, few specks limonite
95	100	Brown -buff & brown dolomite, trace calcite, trace limonite
100	105	Brown-buff & brown dolomite, few specks calcite, trace limonite
105	110	Gray dark-speckled dolomite, buff dolomite & brown chert 5, few specks limonite & marcasite BLUE - 105
110	112½	Gray dark-speckled dolomite, brown & buff dolomite 10, marcasite 1/10
112½	115	Dark to light brown dolomite limestone, gray dark-speckled dolomite 60-40, trace marcasite, few specks blende OIL 113.5
115	117½	Dark to light brown limestone, trace calcite, trace marcasite, a speck blende
117½	120	Light brown limestone, dark brown limestone 10, trace marcasite blende ½ CLAY - 120
120	122½	Dark brown & brown limestone, black shaly limestone 20, few specks green shale & gray clay, trace marcasite, blende 1/10
122½	125	Gray dolomite limestone, brown & dark brown limestone 5, buff dolomite 3, trace marcasite, trace blende GLASS - 120.5 McGREGOR - 122.5

Water table: 57'

219

Lafayette County
~~Sec. R~~ ~~210~~

~~Serial No.~~ 2
Hole No. 6
Collar Elevation: 1001.19'
Depth of Hole: 132.4' (Measurement by steel tape)
Location: Verna B. Cole

Date completed: 6/18/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown-buff clay, some buff dolomite & chert
10	15	Brown clay, few cuttings buff dolomite & chert
15	20	Buff dolomite, brown chert 97-3, limonite ½
20	30	Buff dolomite, brown & tan chert 99-1, trace limonite
30	40	Buff dolomite, gray & tan chert 98-2, trace limonite
40	50	Buff dolomite, brown & tan chert 96-4, few specks limonite
50	60	Buff dolomite, brown & tan chert 95-5, few specks limonite
60	70	Buff dolomite, brown & tan chert 99-1, few specks limonite
70	80	Buff dolomite, brown & tan chert 97-3, few specks limonite
80	90	Buff dolomite, brown & tan chert 94-6, few specks limonite
90	95	Buff dolomite, tan chert 99-1, a speck limonite
95	100	Buff dolomite, few specks tan chert, trace limonite
100	105	Brown-buff dolomite, few specks tan chert, few specks limonite
105	110	Brown-buff dolomite, few specks brown & tan chert, few specks limonite
110	115	Brown-buff dolomite, limonite stained buff clay 5, few specks limonite
115	117½	Buff limonite stained dolomite & brown-buff dolomite, few fossils, limonite 4
117½	120	Buff limonite stained dolomite & light brown dolomite, few fossils, brown chert 1, limonite 5
120	122½	Gray, brown buff & brown-buff dolomite, gray clay 5, trace calcite, limonite & marcasite 10, gray dark-speckled dolomite 5
122½	125	Brown & tan limestone, gray brown & buff dolomite 10, limonite & marcasite 8 OIL 122.5
125	127½	Tan limestone, trace buff & brown dolomite, limonite & marcasite, few specks blende
127½	130	Green shale & gray clay, dark brown limestone, tan limestone 60-20-20, buff & brown dolomite 15, marcasite & limonite ½ CLAY - 128
130	132½	Brown & dark brown dolomite limestone, gray dolomite limestone 60-40, buff dolomite 10, gray clay 5, marcasite & limonite 1 GLASS 129.5

McGREGOR - 131.5

Water table: 59'

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2209

Lafayette County
~~Sec. [illegible] 210~~

~~Serial No. 3~~
Hole No. 7
Collar Elevation: 1002.50'
Depth of Hole: 130'
Location: Verna B. Cole

Date completed: 6/23/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Red-buff clay
5	10	Brown-buff clay
10	15	Brown-buff clay, buff dolomite & chert, trace limonite
15	20	Brown-buff clay, buff dolomite & chert, trace limonite
20	25	Buff sandy clay & buff dolomite, some tan chert, trace limonite
25	30	Buff dolomite, buff & tan chert 97-3, (28-30 open ground)
30	35	Coarse cuttings buff dolomite & brown & buff chert (32-35 open ground)
35	40	Coarse cuttings buff dolomite, tan chert 99-1
40	45	Very coarse cuttings buff dolomite, trace chert
45	55	Buff dolomite, brown & tan chert 99-1, trace limonite
55	65	Buff dolomite, brown & tan chert 97-3, few specks limonite
65	75	Buff dolomite, brown & tan chert 94-6, few specks limonite
75	85	Buff dolomite, brown & tan chert 93-7, a speck limonite
85	90	Buff dolomite, brown & tan chert 97-3, a speck limonite
90	95	Buff dolomite, gray & gray dark-speckled dolomite 80-20, trace marcasite & limonite — GRAY - 94
95	97½	Buff dolomite, gray & gray dark-speckled dolomite 60-40, few specks limonite & marcasite
97½	100	Buff dolomite, gray & gray dark-speckled dolomite 90-10, trace limonite & marcasite
100	102½	Buff dolomite, brown chert 99-1, trace marcasite & limonite
102½	105	Buff dolomite, few specks brown chert, few specks limonite & marcasite
105	107½	Buff & brown dolomite, few specks brown & tan chert, few specks gray dolomite, few specks limonite & marcasite
107½	110	Gray dark-speckled dolomite, buff & brown dolomite 70-30, trace marcasite & limonite — BLUE - 107.5
110	112½	Gray dark-speckled dolomite, buff dolomite 85-15, trace marcasite & limonite, a speck blende
112½	115	Gray dark-speckled dolomite, gray clay 80-20, trace buff dolomite, trace marcasite & limonite
115	117½	Grown dolomite limestone & brown limestone, brown clay 5, gray clay 10, gray dark-speckled dolomite, trace marcasite, few specks blende — OIL - 115
117½	120	Brown & tan limestone, brown limy shale 5, trace marcasite
120	122½	Brown & tan limestone, green shale & gray clay 60-40, phosphate 1, trace marcasite, few specks blende
122½	125	Coarse cuttings, brown dolomite limestone, trace gray clay, trace calcite, marcasite ½, a speck blende
125	127½	Brown & light brown dolomite limestone, dark brown limy shale 15, few specks light gray fossiliferous limestone, trace marcasite
127½	130	Light gray brown fossiliferous dolomite limestone, trace green shale, brown limestone 5, trace marcasite — CLAY 121.5

GLASS 122.5

Water table: 130' — McGREGOR 128.0

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22la

Lafayette County
~~Sec. [illegible] 210~~

~~Serial No. 4~~
Hole No. 8
Collar Elevation: 1000.54'
Depth of Hole: 132.9' (Measurement by steel tape)
Location: Verna B. Cole

Date completed: 6/26/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Buff clay & soil
5	10	Buff clay
10	15	Brown-buff clay
15	20	Brown-buff clay
20	25	Brown sandy clay, some buff dolomite & chert
25	30	Coarse cuttings buff dolomite, brown chert 90-10, trace limonite
30	40	Coarse cuttings buff dolomite, brown chert 92-6, trace brown clay
40	50	Coarse cuttings buff dolomite, brown & tan chert 85-15
50	60	Brown-buff dolomite, brown & tan chert 90-10, trace limonite (few coarse cuttings)
60	70	Brown-buff dolomite, brown & tan chert 98-2, trace brown clay, limonite ½
70	80	Brown-buff dolomite, brown & tan chert 90-10, (coarse cuttings), brown clay 5
80	90	Coarse cuttings brown-buff dolomite, brown & tan chert 95-5
90	95	Coarse cuttings brown-buff dolomite, brown & tan chert 90-10
95	100	Few coarse cuttings brown-buff dolomite, brown & tan chert 80-20, brown clay 10
100	105	Coarse cuttings brown-buff dolomite, brown & tan chert 92-8
105	110	Brown-buff dolomite, brown & gray & red clays 15
110	115	Coarse cuttings brown & buff limonite stained dolomite & chert
115	120	Coarse cuttings brown & buff limonite stained dolomite & chert, buff clay 15 — OIL 120± ?
120	122½	Dark brown fossiliferous shaly limestone, buff dolomite & tan chert 60-, tan limestone 20, a speck marcasite
122½	125	Gray clay, brown & buff dolomite & chert 50, tan limestone 5, trace phosphate, few specks marcasite — CLAY 123 ± ?
125	127½	Brown & buff dolomite & chert, gray clay 5, brown & tan limestone 1, a speck marcasite — GLASS 125 ±?
127½	130	Coarse cuttings, brown & buff dolomite & chert, glassrock limestone 5
130	132½	Coarse cuttings brown & buff dolomite & chert, buff clay 5, gray dolomite limestone 15, brown limestone & dark brown shale 5, a speck marcasite — McGREGOR 132 ± ?

Water table:

2229

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 5~~
Hole No. 9
Collar Elevation: 1008.31'
Depth of Hole: 131'
Location: Verna B. Cole, Tract 1

Date completed: 7/1/52
Drilled by: Eagle-Picher, DMA
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil & gray brown & buff clay	
5	10	Gray brown & buff clay	
10	15	Gray brown & buff clay	
15	20	Buff clay	
20	25	Buff clay, some buff dolomite & tan chert, few specks limonite	
25	30	Buff dolomite-brown chert 95-5, buff clay 5, brown clay 1, few specks limonite	
30	40	Coarse cuttings, buff dolomite-tan chert 93-7, buff clay 5	
40	50	Buff dolomite-brown & tan chert 95-5, few specks limonite	
50	60	Brown buff dolomite-brown & tan chert 97-3, few specks marcasite	
60	70	Buff dolomite-brown & tan chert 98-2, few specks limonite	
70	80	Buff dolomite-brown & tan chert 90-10, light brown clay 5	
80	90	Buff dolomite-brown & tan chert 85-15, light brown clay 1	
90	95	Buff dolomite & light brown dolomite-brown & tan chert 94-6, brown clay 5, few specks limonite	
95	100	Buff & light brown dolomite-brown & tan chert 93-7, gray/brown clay 20, few specks limonite	
100	102½	Buff dolomite-light gray dolomite 80-20, brown chert 1, a speck limonite	GRAY
102½	105	Buff dolomite & light gray dolomite, brown chert 1, a speck limonite	
105	107½	Buff dolomite & light gray dolomite, buff clay 10, few specks chert	
107½	110	Buff & light gray dolomite, brown chert 3, buff & gray clay 3	
110	112½	Pale gray & buff dolomite, few specks white chert	BLUE
112½	115	Pale gray & buff dolomite, brown & tan chert 2	
115	117½	Buff dolomite, pale gray dolomite 5, brown & tan chert 11, trace buff clay, few specks limonite	
117½	120	Buff dolomite, light brown dolomite 5, fossil 15, dark brown shale 5, brown clay 1, few specks limonite	OIL 119
120	122½	Dark brown shale 30, gray clay 20, brown limestone 30, brown clay 10, buff dolomite & clay 10, considerable fossils, limonite & marcasite ½	CLAY
122½	125	Gray clay 70, dark brown limy shale 15, brown & buff clay 10, buff dolomite 5, limonite & marcasite 1/10	
125	127½	Brown dolomitic limestone, brown, buff & gray dolomite 20, brown & gray clay 5, trace marcasite	GLASS
127½	130	Brown dolomitic limestone, trace gray dolomitic limestone buff & brown dolomite 40, a speck marcasite	
130	131	Gray dolomitic limestone-light brown limestone 80-20, buff & brown dolomite 30, few specks marcasite	McGREGOR 130 plus/minus 1

223a

~~Serial No. 6~~

Hole No. 10
Collar Elevation: 1024.59'
Depth of Hole: 137½'
Location: Verna B. Cole

Lafayette County
~~Sec. Rge. 210~~

Date completed: 7/3/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff clay
10	20	Buff clay, coarse cuttings, buff dolomite & buff chert 20
20	35	Buff clay coarse cuttings, buff dolomite & buff chert 30
35	40	Buff clay-coarse cuttings buff dolomite & buff chert 50-50 trace limonite
40	45	Coarse cuttings, buff dolomite-brown & buff chert 90-10 limonite ½
45	50	Coarse cuttings buff dolomite-brown & buff shale 85-15
50	60	Buff dolomite-brown & tan chert 97-3, limonite & marcasite ½ few coarse cuttings
60	70	Buff dolomite-brown & tan chert 95-5, limonite & marcasite 1, few coarse cuttings
70	80	Buff dolomite-brown & tan chert 96-4, trace limonite & marcasite
80	85	Buff dolomite, few specks chert, few specks limonite
85	90	Buff dolomite, trace brown chert, few specks limonite
90	92½	Pale brown buff dolomite, few specks limonite GRAY ?
92½	95	Gray dolomite-light brown dolomite 60-40, few specks limonite
95	97½	Light gray/brown dolomite, few specks limonite
97½	100	Gray dolomite, few specks limonite & marcasite
100	102½	Gray/brown dolomite-gray dark/speckled dolomite 80-20, few specks limonite & marcasite BLUE 102
102½	105	Gray dark/speckled dolomite, trace calcite, few specks limonite & marcasite
105	107½	Light gray dark/speckled dolomite, trace calcite, few specks limonite & marcasite
107½	110	Light gray dark/speckled dolomite-light brown dolomitic limestone 80-20, few specks limonite & marcasite OIL 109½
110	112½	Light brown & tan dolomitic limestone, trace marcasite
112½	115	Light brown & tan limestone & dolomitic limestone, trace marcasite
115	117½	Brown & tan limestone, brown shale 3, trace marcasite
117½	120	Brown & tan limestone, brown shale 10, trace marcasite
120	122½	Tan & gray/brown limestone, brown shale 10, trace marcasite
122½	125	Green shale & gray clay - black limestone-brown & gray/brown limestone 40-20-40, trace marcasite CLAY 123½
125	127½	Brown & tan fossiliferous limestone, marcasite 1/10 GLASS 125
127½	130	Brown & tan fossiliferous limestone, green & gray shale 5, marcasite 1/10
130	132½	Light brown & tan limestone, green shale 1, brown shale 2, few specks marcasite
132½	135	Brown & tan limestone, dark brown shale 10, trace green shale, few specks marcasite
135	137½	Gray dolomitic limestone-brown & tan limestone 80-20, trace green shale, few specks marcasite McGREGOR 135½

Water table: 94'

2249

Lafayette County
~~Sec. R[illegible] 210~~

~~Serial No. 7~~
Hole No. 11
Collar Elevation: 1005.18'
Depth of Hole: 133' (Measurement by steel tape)
Location: Verna B. Cole

Date completed: 7/8/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soils
5	10	Buff & light gray/brown clay
10	20	Light buff clay, some buff dolomite
20	30	Dark buff clay, considerable pale buff dolomite chert rubble
30	35	Buff dolomite-gray & buff chert 90-10, a speck limonite, trace brown clay
35	45	Buff dolomite-gray & buff chert 92-8, trace limonite
45	55	Buff dolomite-brown & gray chert 93-7, limonite ½
55	65	Buff dolomite-brown & gray chert 94-6, limonite 1
65	75	Buff dolomite-brown & tan chert 98-2, limonite ½
75	85	Buff dolomite-brown & tan chert 94-6, limonite ½
85	95	Buff dolomite-trace brown & tan chert, trace limonite
95	100	Buff dolomite-brown & tan chert 97-3, brown clay 5, trace limonite
100	102½	Light brown/buff to gray dolomite, trace limonite GRAY - 101 plus/minus 1
102½	105	Light brown/buff to gray dolomite, trace limonite
105	107½	Light gray & some brown/buff dolomite, trace limonite, few specks marcasite
107½	110	Light gray dolomite, brown/buff dolomite 10, few specks limonite & marcasite
110	112½	Gray & gray dark/speckled dolomite, brown/buff dolomite 5, few specks limonite & marcasite BLUE - 111 plus/minus 1
112½	115	Gray & gray dark/speckled dolomite & brown/buff dolomite 5, few specks limonite & marcasite
115	117½	Gray dark/speckled dolomite, trace buff dolomite, few specks limonite & marcasite
117½	120	Gray dark/speckled dolomite-light brown & tan dolomitic limestone 60-40, calcite 4, marcasite ½ OIL 119
120	122½	Brown & tan limestone, dark brown shale 5, trace calcite marcasite ½, few specks blende
122½	125	Gray clay-light brown limestone 80-20, trace phosphate, trace marcasite CLAY 123
125	127½	Gray clay-brown dolomitic limestone 80-20, trace marcasite GLASS 127
127½	130	Gray dolomitic limestone-brown dolomitic limestone 60-40, gray clay 5, trace marcasite McGREGOR 129
130	132½	Gray dolomitic limestone, trace calcite, trace marcasite

Water table: 61½'

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2259

Lafaye[illegible] County
~~Sec. Ref. 210~~

~~Serial No. 8~~
Hole No. 12
Collar Elevation: 1006.44
Depth of Hole: 139.0' (Measurement by steel tape)
Location: Verna B. Cole

Date completed: 7/10/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: E. J. Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Buff & gray/brown clay
10	20	Buff & brown clay
20	25	Buff dolomite-brown & tan chert 90-10, few specks limonite, few coarse cuttings
25	36	Buff dolomite-brown & tan chert 88-12, few coarse cuttings
35	45	Buff dolomite-brown & tan chert 95-5, brown clay 5, few coarse cuttings
45	55	Buff dolomite-brown & tan chert 92-8, few coarse cuttings
55	65	Buff dolomite-brown & tan chert 93-7
65	75	Brown/buff dolomite-brown & tan chert 98-2, few coarse cuttings
75	85	Brown/buff dolomite-brown & tan chert 98-2, few coarse cuttings
85	95	Buff dolomite-brown & tan chert 96-4
95	100	Pale brown dolomite & buff dolomite, trace brown & tan chert
100	102½	Light brown & buff dolomite, brown & tan chert 1, brown & buff clay 1
102½	105	Light brown & buff dolomite, buff clay 15 GRAY 102½ - 105
105	107½	Light brown & buff dolomite, buff clay 1
107½	110	Light brown & buff dolomite, brown & gray clay 5, a speck marcasite
110	112½	Light brown & buff dolomite
112½	115	Brown/buff & light brown dolomite, buff clay 1, few specks chert
115	117½	Brown & buff dolomite, brown clay 5
117½	120	Light brown & buff dolomite
120	122½	Brown/buff dark/speckled limy dolomite, coarse cuttings BLUE 120 - 122½
122½	125	Brown/buff dark/speckled limy dolomite, buff clay 10
125	127½	Coarse cuttings, buff & brown dolomite, brown limestone, brown clay & brown chert, a speck marcasite OIL 125 - 127½
127½	130	Coarse cuttings, buff & brown dolomite, brown limestone, buff & brown clay, green shale & gray clay, few specks marcasite
130	132½	Coarse cuttings, green shale, gray clay, brown limestone, few specks phosphate, trace marcasite
132½	135	Brown dolomitic limestone, buff dolomite 15, green shale & gray clay 5, trace light brown limestone, trace marcasite
135	137½	Brown dolomitic limestone-gray dolomitic limestone 50-50, buff dolomite 8, light gray shale 10, green shale 3, gray/brown & brown shale 10, trace marcasite McGREGOR 136

Water table:

2269

Lafayette County
~~Sec. R[illegible] 210~~

~~Serial No. 9~~
Hole No. 13
Collar Elevation: 1015.06'
Depth of Hole: 128.0' (Measurement by steel tape)
Location: Verna B. Cole

Date completed: 8/30/52
Drilled by: Eagle-Picher, D.M.A.
Logged by: Davis & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Brown soil & brown clay
10	15	Light brown clay
15	20	Buff clay, some dolomite & chert
20	25	Buff dolomite & buff clay, brown & tan chert 95-5
25	30	Buff dolomite & buff clay, brown & tan chert 90-10, coarse cuttings
30	35	Coarse cuttings buff dolomite & brown chert & tan chert, some buff clay
35	40	Buff dolomite, brown & tan chert 90-10 (few coarse cuttings) some buff clay
40	50	Buff dolomite, brown & tan chert 85-15
50	60	Buff dolomite, brown & tan chert 90-10, trace limonite
60	70	Buff dolomite, tan chert 99-1, trace limonite
70	80	Buff dolomite, brown & tan chert 95-5, trace limonite
80	90	Light brown dolomite, trace brown & tan chert, trace limonite, few specks marcasite
90	95	Gray dolomite, light brown dolomite 80-20, limonite 1/10, few specks marcasite GRAY - 91
95	100	Gray dolomite & light brown dolomite, trace limonite & marcasite (fine cuttings)
100	102½	Gray dark-speckled dolomite, gray dolomite 60-40, gray clay 10, trace limonite & marcasite (fine cuttings)
102½	105	Gray, gray dark-speckled & light brown dolomites, trace limonite & marcasite (fine cuttings)
105	107½	Gray & light brown & brown dolomites, trace limonite & marcasite (fine cuttings) BLUE - 101
107½	110	Gray dark-speckled dolomite & gray clay, some brown dolomite trace marcasite & limonite (fine cuttings)
110	112½	Brown & tan dolomitic limestone & brown shale limestone, trace calcite, trace marcasite & limonite OIL - 110
112½	115	Pale brown dolomitic limestone, trace marcasite
115	117½	Light brown dolomitic limestone, trace brown limy shale, trace marcasite
117½	120	Light gray clay & green shale, light brown dolomitic limestone, 80 - 20, trace brown shale, trace marcasite CLAY - 120
120	122½	Brown dolomitic limestone, gray clay 80-20, trace marcasite GLASS - 120½
122½	125	Brown & light brown dolomitic limestone, some brown shale, trace green shale, calcite 1, trace marcasite McGREGOR - 125
125	127½	Gray dolomitic limestone, brown dolomitic limestone 80-20, trace green shale, calcite ½, trace marcasite

Water table: 72.5 '

2229

~~Serial No. 10~~
Hole No. 14
Collar Elevation: 998.47'
Depth of Hole: 127.5' (Measurement by steel tape)
Location: Verna B. Cole (Tract #2)

Lafayette County
~~Sec. Ref. 210~~

Date completed: 10/9/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Light brown clay
10	15	Buff clay
15	20	Dark buff clay, brown chert 99-1
20	25	Dark buff clay
25	30	Dark buff clay, buff calcareous dolomite
30	45	Dark buff clay, buff calcareous dolomite, trace gray chert
45	50	Buff dolomite, gray-brown chert 90-10, trace limonite
50	55	Coarse cuttings: buff dolomite, gray-brown chert 99-1, trace limonite
55	60	Some coarse cuttings: buff dolomite, gray-brown chert 95-5, trace limonite
60	70	Buff dolomite, gray-brown & tan chert 92-8, limonite 1
70	80	Buff dolomite, gray-brown chert 80-20, limonite 1
80	90	Dark buff dolomite, gray-brown & tan chert 90-10, limonite 1 - GRAY -??
90	95	Gray-buff dolomite, limonite 2
95	100	Gray dark-speckled dolomite, buff dolomitic ravellings 80-20, limonite 2, few specks marcasite BLUE - 95?
100	102½	Gray dark-speckled dolomite, buff dolomite ravellings 92-8, limonite 2, few specks marcasite
102½	105	Gray dark-speckled dolomite, buff dolomite ravellings 99-1, few specks marcasite
105	107½	Gray dark-speckled dolomite, gray-brown chert ravellings 90-10, limonite & marcasite ½
107½	110	Brown fossiliferous dolomitic limestone, limonite 3, marcasite 2/10 OIL - 107.5
110	112½	Brown fossiliferous dolomitic limestone, limonite (coarse) 10, limonite 1/10
112½	115	Brown dolomitic limestone, considerable buff dolomite & chert ravellings, limonite 3, specks marcasite
115	117½	Brown dolomitic limestone, gray clay & green shale 60-40, limonite 4, marcasite 1/10, some buff dolomite & chert ravellings CLAY - 116.5
117½	120	Dark brown dolomite, gray dolomitic limestone 95-5, marcasite 1/10, little buff dolomite ravellings McGREGOR - 119.9
120	122½	Gray dolomitic limestone, marcasite 1/10, limonite (ravellings) 4, some buff dolomitic ravellings
122½	125	Gray dolomitic limestone, marcasite 1/10, limonite & buff dolomitic ravellings
125	127½	Gray dolomitic limestone, trace marcasite, limonite & buff dolomitic ravellings

Water table: 55'

Depth From	Depth To	Remarks
13	25	Loose bouldery dolomite & clay
25	40	Real loose
40	65	Fairly solid. Hit water 60-65
75	80	Loose. Drilled 8" hole to 87 feet

2280

Lafa[illegible]te County
~~Sec. Ref. 210~~

~~Serial No. 11~~
Hole No. 15
Collar Elevation: 1001.21'
Depth of Hole: 132.5' (Measurement by steel tape)
Location: Verna B. Cole (Tract #2)

Date completed: 10/11/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Brown clay
10	20	Buff clay
20	25	Buff clay, buff dolomite 50-50, brown chert 1
25	30	Buff dolomite, tan & gray chert 92-8
30	35	Buff dolomite, gray chert 95-5
35	40	Buff dolomite, gray chert (coarse) 90-10
40	45	Buff dolomite, gray-brown chert (coarse) 92-8
45	50	Extra coarse cuttings: buff dolomite, brown, gray & white chert 75-25
50	60	Coarse cuttings: Buff dolomite, gray-brown chert 88-12, specks limonite
60	65	Coarse cuttings, dark brown dolomite, gray-brown & yellow chert 93-7
65	70	Coarse cuttings: dark buff dolomite, brown & tan chert 85-15
70	75	Coarse cuttings: Dark buff dolomite, brown & tan chert 88-12
75	80	Coarse cuttings: Dark buff dolomite, brown & tan chert 65-35, specks limonite
80	85	Coarse cuttings: Dark buff dolomite, tan chert 82-18
85	90	Fairly coarse cuttings: buff & brown-buff dolomite, tan & brown chert 93-7
90	95	Fairly coarse cuttings: dark buff & brown-buff dolomite, tan chert 94-6 GRAY - 95 ?
95	100	Coarse cuttings: dark buff dolomite, trace tan chert
100	102½	Coarse cuttings: buff dolomite & gray-buff dolomite, tan chert 1, trace red-brown clay
102½	105	Coarse cuttings: dark buff & gray-buff dolomite, tan chert 2
105	107½	Coarse cuttings: dark buff dolomite, tan chert 5
107½	110	Some extra coarse cuttings: buff dolomite, buff dolomite with dark specks 90-10, tan chert 5, trace calcite, few specks green shale BLUE - 109½
110	112½	Coarse cuttings: buff dolomite with dark brown shale, trace tan chert
112½	115	Coarse cuttings: buff dolomite, buff dolomite with dark brown shale 90-10, tan chert 2
115	117½	Coarse cuttings: dark buff dolomite with dark brown specks, green-buff clay 2, trace chert, few fossils, specks marcasite OIL -117½
117½	120	Coarse cuttings: buff dolomite, brown fossiliferous dolomitic limestone 60-40, tan chert 1, specks marcasite
120	122½	Coarse cuttings: Brown dolomitic limestone & brown clay, buff dolomite & chert ravelling, specks marcasite
122½	125	Green clay, some buff dolomitic ravellings, specks phosphate, specks marcasite CLAY 122½
125	127½	Bentonite, brown dolomitic limestone 60-40, buff dolomitic ravellings, marcasite 4/10 GLASS - 126½
127½	130	Coarse cuttings: buff dolomitic ravellings, brown limestone 90-10, marcasite 1/10
130	132½	Coarse cuttings: dark brown limestone, gray dolomitic limestone 90-10, buff dolomitic ravelling 15, trace marcasite McGREGOR - 132.2

Water table: 56'

2299

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 33~~
Hole No. 16
Collar Elevation: 1007.94'
Depth of Hole: 140.4' (Measurement by steel tape)
Location: Verna B. Cole (Tract #1)

Date completed: 3/5/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	15	Brown clay
15	20	Dark buff clay, few specks brown chert
20	25	Buff dolomite, buff clay, gray-brown chert 46-46-8, few specks galena
25	30	Buff dolomite, buff clay, gray-brown chert 60-37-3, few specks galena
30	35	Buff dolomite, buff clay, gray-brown chert 83-10-7
35	40	Buff dolomite, gray-brown & brown chert 92-8, few specks galena
40	50	Light buff dolomite, gray-brown chert 93-7, few specks galena
50	60	Light buff dolomite, gray-brown chert 98-2, few specks galena
60	70	Light buff dolomite, gray-brown chert 99-1, few specks galena
70	75	Buff dolomite, gray-brown & brown-buff chert 91-9, trace limonite, specks galena
75	80	Brown-buff dolomite, tan & gray-brown chert 60-40, few specks limonite & marcasite
80	85	Buff dolomite, Buffish-brown & tan chert 94-6, specks limonite
85	90	Brown-buff, tan & brown-buff chert 97-3, specks limonite
90	95	Gray dolomite, trace marcasite GRAY - 90
95	97½	Gray dolomite, thin trace marcasite
97½	100	Gray dolomite, few specks marcasite
100	102½	Gray dolomite, trace marcasite
102½	105	Gray dolomite, gray dark-speckled dolomite 80-20, trace marcasite BLUE-104½
105	112½	Dark gray dark-speckled dolomite, trace marcasite
112½	115	Brown dolomitic limestone, dark gray dark-speckled dolomite 80-20, trace marcasite
115	120	Brown dolomitic limestone, trace brown shale, trace calcite, marcasite 1/10
120	125	Brown dolomitic limestone, dark brown shaly limestone 98-2 trace marcasite, specks blende
125	127½	Gray-brown dark-speckled limestone, dark gray fossiliferous limestone, green shale 60-20-20, thin trace marcasite, few specks phosphate CLAY - 126½
127½	130	Brown dolomitic limestone, dark gray fossiliferous limestone 80-20, trace calcite, trace marcasite GLASS - 128
130	132½	Dark brown dolomite, trace chocolate brown shale, trace marcasite
132½	135	Dark brown dolomite, trace chocolate brown shale, calcite 1, trace marcasite
135	137½	Gray dolomitic limestone, dark brown dolomite 60-40, chocolate brown shale 1, trace marcasite
137½	140	Gray dolomitic limestone, few specks marcasite McGREGOR-136

Water table: 68'

2309

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 96~~
Hole No. 1
Collar Elevation: 1012.05'
Depth of Hole: 136.0' (Measurement by steel tape)
Location: Delmar Heim

Date completed: 9/6/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann & Eastmoore
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown & buff clays
10	20	Brown clay
20	25	Brown clay, some brown & buff dolomite & chert
25	30	Buff dolomite, brown & tan chert 95-5
30	40	Buff dolomite, brown & tan chert 96-4
40	50	Buff dolomite, brown & tan chert 97-3, trace limonite
50	60	Buff dolomite, brown & tan chert 98-2, trace limonite
60	70	Buff dolomite, trace tan chert, trace marcasite & limonite
70	80	Buff limonite stained dolomite, trace brown chert, trace limonite & marcasite
80	90	Buff limonite stained dolomite, brown chert 90-10, limonite 1/10
90	100	Buff limonite stained & light buff dolomite, brown & tan chert 92-8
100	105	Buff limonite stained & light buff dolomite, brown chert 95-5, trace limonite, few specks marcasite
105	107½	Buff limonite stained & light buff dolomite, brown chert 96-4, trace limonite, few specks marcasite
107½	110	Coarse cuttings buff limonite stained dolomite & brown chert, limonite 1/10, few specks marcasite
110	112½	Gray, gray-brown & buff dolomites, trace brown chert, limonite & marcasite ½
112½	115	Gray & gray-brown dolomite, buff dolomite & light brown & brown chert 50, trace limonite, marcasite ½
115	117½	Gray & gray-brown dolomite, buff dolomite & chert 60, trace limonite, marcasite ½
117½	120	Gray & gray-brown dolomite, some light brown-buff dolomitic limestone, considerable buff dolomite, marcasite ½ OIL ?? -117½-120
120	122½	Light brown-buff dolomitic limestone & buff dolomite & light brown & tan chert, limonite½, marcasite ½
122½	125	Light brown-buff dolomitic limestone & buff dolomite & light brown & tan chert, trace limonite, marcasite½
125	127½	Light brown-buff dolomitic limestone, dark brown dolomitic limestone 20, marcasite ½, trace limonite
127½	130	Gray clay, some light brown dolomitic limestone & dark brown dolomitic limestone, trace marcasite CLAY - 127½
130	132½	/Dark brown dolomitic limestone, buff dolomite 30, marcasite ½
132½	135	Light brown & dark brown dolomitic limestone, gray dolomitic limestone 8, dark brown shale 3, marcasite 1, trace limonite GLASS-130
135	136	Gray dolomitic limestone, light buff dolomite 40, marcasite ½ McGREGOR - 135

2319

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 97~~
Hole No. 2
Collar Elevation: 1012.23'
Depth of Hole: 137.5' (Measurement by steel tape)
Location: Delmar J. Heim

Date completed: 9/9/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann & Eastmoore
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Buff & brown clays
10	15	Brown clay
15	20	Buff clay
20	25	Buff dolomite, brown chert & buff clay, some coarse cuttings
25	30	Buff dolomite, brown chert 90-10, trace limonite
30	45	Buff dolomite, brown & tan chert 95-5, few specks limonite
45	60	Light buff dolomite, brown & tan chert 96-4, few specks limonite
60	75	Buff dolomite, brown & tan chert 96-4, limonite 1/10
75	85	Brown-buff dolomite, brown chert 99-1, trace limonite
85	90	Light brown dolomite, light brown chert 97-3, trace limonite
90	95	Light brown dolomite, few specks gray-brown dolomite, trace brown chert, trace limonite, few specks marcasite
95	100	Gray dolomite, light brown dolomite 60-40, trace limonite, trace marcasite GRAY - 97
100	105	Gray-brown dolomite, light brown dolomite 10, trace calcite, marcasite 1/10, trace limonite
105	107½	Gray dolomite, light brown dolomite 5, trace marcasite, trace limonite
107½	110	Gray dolomite, gray-speckled dolomite 60-40, light brown dolomite 15, marcasite 10, trace limonite BLUE - 109
110	112½	Gray-dark-speckled dolomite, calcite ½, marcasite 1/10
112½	115	Gray dark-speckled dolomite, light brown dolomite 10, marcasite 2/10
115	117½	Gray dark-speckled dolomite, gray clay 5, trace light brown limy dolomite, marcasite 1/10
117½	120	Brown & gray-brown limy dolomite, calcite ½, trace marcasite OIL -117.5
120	122½	Brown & gray-brown limestone, trace gray clay, trace marcasite
122½	125	Brown & tan dolomitic limestone, marcasite 1/10
125	127½	Brown dolomitic limestone & gray fossiliferous limy shale, trace marcasite
127½	130	Gray clay, brown limestone 10, trace marcasite, trace phosphate CLAY - 127.5
130	132½	Brown dolomitic limestone, calcite 5, marcasite 10 GLASS - 130
132½	135	Brown dolomitic limestone, calcite 3, dark brown shale limestone 8, marcasite 3
135	137½	Gray dolomitic limestone, brown dolomitic limestone 60-40, marcasite ½ McGREGOR - 136

Water table: 70'

2329

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 98~~
Hole No. 3
Collar Elevation: 997.72'
Depth of Hole: 122.5' (Measurement by steel tape)
Location: Delmar J. Heim

Date completed: 9/12/52
Drilled by: Eagle-Picher, DMA
Logged by: Eastmoore & Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil & clay (6" soil)
5	10	Clay
10	15	Clay & chert gravel
15	20	Brown mud
20	25	Buff dolomite, trace limonite, trace gray chert
25	30	Buff dolomite, gray chert 98-2, trace limonite
30	50	Buff dolomite, gray & tan chert 97-3, trace limonite
50	60	Brown-buff dolomite, brown & tan chert 98-2
60	65	Brown-buff dolomite, brown & tan chert 94-6
65	70	Buff & brown dolomite, brown chert 99-1, marcasite ½
70	75	Buff dolomite, gray dolomite 60-40, trace marcasite
75	80	Gray dolomite, trace marcasite
80	85	Gray-buff dolomite, brown chert 99-1, marcasite trace
85	90	Gray-buff dolomite, gray & brown chert 98-2, marcasite 1½
90	92½	Buff dolomite, gray dolomite 80-20, trace brown chert, marcasite 1
92½	95	Gray-buff dolomite, gray dark-speckled dolomite 80-20, marcasite 2/10
95	97½	Gray-brown dolomite, gray dark-speckled dolomite 80-20, marcasite 1/10, trace brown chert
97½	100	Brown limy dolomite, trace brown limy shale, trace brown chert, marcasite 1/10 OIL - 97'
100	102½	Brown limy dolomite, brown limy shale 3, marcasite trace, galena specks
102½	105	Brown limy dolomite, brown limy shale 2, marcasite trace
105	107½	Brown limy dolomite, brown limy shale 1, gray clay & gray clay 20, marcasite trace CLAY - 106
107½	110	Gray & light brown limy dolomite, trace gray clay, marcasite trace GLASS - 107
110	112½	Brown & light brown dolomitic limestone, marcasite trace
112½	115	Brown dolomitic limestone, marcasite 2/10
115	117½	Brown dolomitic limestone, brown limy shale 5, trace calcite, marcasite 1, trace green greasy shale
117½	120	Brown dolomitic limestone, light brown-gray limestone 60-40, trace green shale, trace gray greasy shale, trace brown shale marcasite 2/10 McGREGOR - 119'
120	122½	Gray limestone, trace gray greasy shale, trace brown shale, trace green shale, trace calcite, marcasite 2/10

Water table: 41.5'

2339

~~Serial No. 12~~
Hole No. 1
Collar Elevation: 999.66'
Depth of Hole: 135.5' (Measurement by steel tape)
Location: Henry V. Hinderman

Fayette County
~~Sec. Ref. 210~~

Date completed: 6/28/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil & clay
5	10	Buff clay
10	20	Brown sandy clay, few coarse cuttings buff dolomite & chert
20	25	Coarse cuttings buff dolomite & chert, brown sandy clay 15
25	35	Buff dolomite, buff chert 97-3, trace limonite, few coarse cuttings
35	45	Buff dolomite, brown & tan chert 98-2, trace limonite, few coarse cuttings
45	55	Buff dolomite, brown & tan chert 97-3, few coarse cuttings
55	65	Buff dolomite, tan chert 97-3, few coarse cuttings
65	75	Buff dolomite, trace brown & tan chert, a speck marcasite, few coarse cuttings
75	80	Buff dolomite, brown & tan chert 95-5, few coarse cuttings
80	85	Coarse cuttings buff dolomite, brown chert 90-10
85	95	Brown-buff dolomite, brown & tan chert 99-1
95	100	Coarse cuttings brown-buff dolomite, brown & tan chert 99-1
100	110	Light brown-buff dolomite, few specks tan chert, a speck limonite
110	115	Light brown-buff dolomite, brown & tan chert 97-3, few specks limonite
115	117½	Light brown dolomite, brown & tan chert 99-1, gray clay & shale 1
117½	120	Light brown & buff dolomite, few specks chert, few specks marcasite
120	122½	Buff dolomite, brown shale 1, fossils 4, a speck marcasite OIL 120-12
122½	125	Coarse cuttings, brown shale & brown fossiliferous limestone
125	127½	Coarse cuttings, green shale & gray clay, brown fossiliferous limestone 80-20 CLAY 125-127½
127½	130	Coarse cuttings, brown dolomite limestone, gray clay 15, few specks marcasite GLASS 127½-130
130	132½	Coarse cuttings, brown dolomite limestone & brown limestone, buff dolomite 30
132½	135	Coarse cuttings, gray dolomite limestone, buff dolomite 40, few specks marcasite McGREGOR 132½-135

Water table: 55'

239g

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 13~~
Hole No. 2
Collar Elevation: 1028.33'
Depth of Hole: 60'
Location: Henry V. Hinderman

Date completed: 9/20/52 (abandoned)
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	15	Brown clay
15	25	Dark buff dolomite & gray-brown chert
25	30	Buff dolomite & a little chert
30	35	Coarse cuttings: buff dolomite, gray-brown chert 60-40
35	60	Buff dolomite & a little chert

Remarks
First solid formation at 33'
Extremely loose formation at 50' to 52'
Hole abandoned by driller at 60' due to caving ground and inability to keep it straight enough to drill.

2359

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 14~~
Hole No. 3
Collar Elevation: 1028.17'
Depth of Hole: 147.0 (Measurement by steel tape)
Location: Henry V. Hinderman

Date completed: 9/25/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff clay
10	15	Buff clay, red & buff chert 96-4
15	20	Buff clay, buff, yellow & red chert 60-40
20	25	Buff clay, yellow, buff & red chert 70-30, trace buff dolomite, trace limonite
25	30	Buff dolomite, buff clay 50-50, red & brown chert 1 (loose boulders)
30	35	Buff dolomite, buff clay 60-40, yellow & red chert 1 (loose boulders)
35	40	Buff dolomite, yellow & gray-brown chert 90-10, trace red chert, trace limonite (solid formation)
40	50	Buff dolomite, gray-brown chert 88-12, trace limonite
50	60	Buff dolomite, yellow & gray-brown chert 98-2, limonite 2/10
60	70	Buff dolomite, yellow & light brown chert 97-3, few specks limonite
70	80	Buff dolomite, trace yellow chert
80	90	Buff dolomite, yellow, light brown & buff chert 95-5
90	100	Coarse cuttings: buff dolomite, gray-brown & yellow chert 88-12, few specks limonite
100	105	Few coarse cuttings: buff dolomite, light yellow & buff chert 96-4, few specks limonite
105	110	Buff dolomite, buff, yellow & gray-brown chert 97-3, specks green shale, specks limonite GRAY - 107½
110	115	Buff dolomite, yellow & gray-brown chert 90-10, specks marcasite & limonite (ravelling)
115	117½	Buff dolomite, buff & tan chert 96-4, (coarse cuttings), few coarse chips of limonite
117½	120	Buff dolomite, brown & tan chert 97-3, few coarse cuttings, trace limonite
120	122½	Buff dolomite, buff & tan chert 95-5
122½	125	Dark brown dolomite with dark specks, buff dolomite 80-20 BLUE - 123
125	127½	Dark buff dolomite & dark brown dolomite with dark specks (coarse cuttings), some fossils
127½	130	Buff & brown-buff dolomitic limestone, chocolate brown shale 95-5, numerous fossils OIL - 127½
130	132½	Brown fossiliferous dolomitic limestone, green clay 90-10, few specks phosphate, trace marcasite CLAY - 132.3
132½	135	Mostly buff dolomite & gray-brown chert ravellings (coarse cuttings) trace green clay, few specks marcasite
135	137½	Light brown dolomitic limestone, considerable buff dolomitic ravellings, specks marcasite GLASS - 135
137½	140	Light brown dolomitic limestone, gray dolomitic limestone 60-40, considerable buff dolomitic ravellings, few specks marcasite McGREGOR - 139
140	142½	Gray dolomitic limestone, considerable buff dolomitic ravellings, few specks marcasite
142½	145	Gray dolomitic limestone, considerable buff dolomitic ravellings, few specks marcasite

Water table: 82'

2-3629

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 15~~
Hole No. 4
Collar Elevation: 1021.79'
Depth of Hole: 148.0' (Measurement by steel tape)
Location: Henry V. Hinderman

Date completed: 10/2/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown & buff soil	
5	10	Buff clay	
10	20	Light brown clay	
20	25	Buff clay, little buff dolomite	
25	30	Buff clay, buff dolomite 60-40 (Unconsolidated bouldery form)	
30	35	Buff dolomite, buff clay 80-20, trace tan chert	
35	40	Buff dolomite, trace gray-brown chert	
40	45	Buff dolomite, gray-brown chert 95-5 (some coarse cuttings) trace limonite	
45	50	Buff dolomite, gray-brown chert 93-7, limonite 1/10 (first solid formation at 46')	
50	60	Buff dolomite, gray-brown chert 96-4, trace limonite	
60	70	Buff dolomite, gray-brown chert 98-2, several coarse chips of limonite	
70	80	Buff dolomite, tan & gray-brown chert 97-3, trace limonite	
80	90	Buff dolomite, gray-brown, tan & dark buff chert 80-20, few specks limonite	
90	95	Buff dolomite, gray-brown, tan & dark buff chert 94-6, trace limonite	
95	100	Gray dolomite (coarse), buff dolomite (medium), 60-40, trace limonite	GRAY - 97
100	105	Gray dolomite, trace green shale, considerable buff dolomite ravelling, few specks marcasite	
105	107½	Gray dolomite, (considerable buff dolomite & chert ravellings), specks marcasite	
107½	110	Buff dolomite, gray dolomite 80-20, trace gray cave clay, trace calcite, specks marcasite	
110	112½	Buff dolomite, gray dark-speckled dolomite 70-30, trace light gray clay, trace dark gray cave clay, specks marcasite	BLUE - 111½
112½	115	Gray dark-speckled dolomite, buff dolomite & chert 60-40, specks marcasite	
115	117½	Gray dark-speckled dolomite, buff dolomite & chert 70-30, specks marcasite	
117½	120	Gray dark-speckled dolomite, brown dolomite limestone 80-20, some buff dolomite & chert ravellings, trace marcasite	OIL - 119½
120	122½	Brown fossiliferous dolomitic limestone, trace marcasite	
122½	125	Brown & tan limestone, specks marcasite	
125	127½	Brown & tan limestone, dark brown shaly limestone 95-5, trace marcasite	
127½	130	Light brown & tan limestone, brown shaly limestone 95-5, trace marcasite	
130	132½	Gray dark-speckled dolomitic limestone, green clay & shale 80-20, few specks phosphate, trace marcasite	CLAY - 132.0
132½	135	Pale brown limestone, bentonite 2, dark gray fossiliferous limestone 2, trace marcasite	GLASS - 133
135	137½	Brown dolomitic limestone & tan limestone, marcasite 1/10	
137½	140	Brown dolomitic limestone & tan limestone, trace marcasite	

Continued

2379

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 15~~
Hole No. 4 (Continued)
Collar Elevation: 1021.79'
Depth of Hole: 148.0' (Measurement by steel tape)
Location: Henry V. Hinderman

Date completed: 10/2/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
140	142½	Dark brown limestone & tan limestone, dark brown shale 3, marcasite 1/10
142½	145	Gray dolomitic limestone, brown & tan limestone 90-10, marcasite 1/10, specks blende McGREGOR - 142.8
145	147	Gray dolomitic limestone, marcasite 1/10, specks blende

Water table: 77'

Depth From	Depth To	Remarks
35	40	Soft
40	45	Caved badly
	At 46'	First real solid formation

Lafayette County
Sec. Ref. 210

Serial No. 16
Hole No. 5
Collar Elevation: 1002.81'
Depth of Hole: 142.4' (Measurement by steel tape)
Location: Henry V. Hinderman

Date completed: 10/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Brown clay
10	20	Brown-buff clay
20	25	Buff clay & buff dolomite, few specks limonite
25	30	Buff clay & buff dolomite, few specks chert
30	35	Buff dolomite, brown chert 95-5, trace limonite
35	40	Buff dolomite, brown & tan chert 90-10, trace limonite
40	45	Buff dolomite, brown & tan chert 96-4, trace limonite
45	50	Buff dolomite, gray-brown & tan chert 92-8, trace limonite
50	60	Buff dolomite, gray-brown & tan chert 94-6, trace limonite
60	70	Buff dolomite, tan & gray chert 91-9, trace limonite
70	80	(Some coarse cuttings:) Buff dolomite, trace gray chert, limonite 1
80	85	Buff dolomite, dark brown chert 60-40, trace tan chert, limonite ½
85	90	Buff dolomite, dark gray-brown cave clay, brown chert 60-30-10, limonite ½
90	95	Coarse cuttings: buff dolomite, brown & tan chert 94-6, limonite ½, trace gray clay
95	100	Coarse cuttings: buff dolomite, brown & tan chert 98-2, limonite 2
100	102½	Coarse cuttings: buff dolomite, brown & tan chert 97-3, limonite 2
102½	105	Coarse cuttings: buff dolomite, brown & tan chert 99-1, limonite 3

Continued

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 16~~
Hole No. 5 (Continued)
Collar Elevation: 1002.81'
Depth of Hole: 142.4' (Measurement by steel tape)
Location: Henry V. Hinderman

Date completed: 10/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
105	107½	Coarse cuttings: buff dolomite, brown & tan chert 94-6, limonite 2, specks calcite
107½	110	Coarse cuttings: buff dolomite, brown & tan chert 95-5, limonite 4
110	112½	Coarse cuttings: buff dolomite, brown & tan chert 97-3, limonite 5
112½	115	Buff dolomite, brown & tan chert 96-4, limonite 1
115	117½	Coarse cuttings: buff dolomite, gray & brown chert 99-1, limonite 1
117½	120	Gray-buff dark-speckled dolomite, gray-buff clay 3, brown & tan chert 4, limonite 2
120	122½	Buff & gray-buff dark-speckled dolomite, tan & brown chert 1, limonite 1
122½	125	Coarse cuttings: buff dolomite, brown chert 95-5, trace gray clay, limonite 1
125	127½	Fairly coarse cuttings: buff dolomite, brown chert, gray dolomite 65-30-5, limonite ½
127½	130	Fairly coarse cuttings: buff dolomite, brown chert, gray dolomite 70-15-15, limonite & marcasite 3
130	132½	Buff dolomite & brown chert, green clay 80-20, few specks phosphate, limonite & marcasite 2 — CLAY - 132?
132½	135	Buff dolomite & brown chert, green clay 60-40, little dark brown dolomite, limonite & marcasite 2 — GLASS - 134?
135	137½	Buff dolomite, dark brown dolomite, gray dolomitic limestone 40-30-30, limonite & marcasite 1 — McGREGOR - 136?
137½	140	Gray dolomitic limestone, buff dolomite 60-40, trace dark brown shale, marcasite & limonite 3/10
140	142	Buff dolomite, gray dolomitic limestone 75-25, limonite & marcasite 2/10

Water table: 70'

Depth From	Depth To	Lithology
8"	60'	Hole drilled and set casing
51'	53'	Loose ground
70'	75'	First flow of water
78'	83'	Loose ground
112½	117½	Caving badly
60	142	6" hole

Impossible to pick contacts due to excessive ravelling.
No "Blue" or "Oilrock" detected.

2399

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 141~~
Hole No. 1
Collar Elevation: 969.30'
Depth of Hole: 146.0' (Measurement by steel tape)
Location: Vincent Pinch

Date completed: 9/26/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Gray-brown clay
10	20	Dark buff clay (few boulders at 18')
20	25	Buff dolomite, gray-brown chert (coarse) 80-20, buff clay 10, limonite 1, a speck galena
25	30	Buff dolomite, gray-brown chert 82-18, trace limonite
30	35	Dark buff dolomite, gray-brown & tan chert 84-16, trace limonite
35	40	Coarse cuttings: dark buff dolomite, gray-brown & tan chert 75-25, limonite 2, trace galena
40	50	Coarse cuttings: dark buff dolomite, gray-brown chert 85-15, limonite 2/10, few specks galena
50	55	Coarse cuttings: dark buff dolomite, gray-brown chert 90-10, limonite 2/10
55	60	Buff dolomite, gray & tan chert 80-20, limonite 5/10, trace marcasite
60	65	Light buff & buff dolomite, white, gray, buff & brown chert 70-30, limonite 1
65	70	Light gray-buff dolomite, light tan chert 98-2, marcasite 4
70	75	Gray-brown dolomite, light gray marcasite-speckled chert 92-8, marcasite 20
75	77½	Gray-brown dolomite, gray chert 99-1, marcasite 30
77½	80	Gray-brown dolomite, gray marcasite-speckled chert 85-15, marcasite 35
80	82½	Light brown dolomite, gray marcasite-speckled chert & tan chert 70-30, marcasite 25
82½	85	Brown dolomite, gray marcasite-speckled chert & tan chert 75-25, marcasite 20
85	87½	Brown dolomite, gray & gray marcasite-speckled chert & tan chert 70-30, marcasite 20
87½	90	Light brown dolomite, gray & tan chert 90-10, marcasite 8
90	92½	Light brown-gray dolomite & buff dolomite, light gray chert 1, limonite-stained clay 2, marcasite 6
92½	95	Light brown-gray dolomite, white chert 98-2, buff dolomite & limonite ravellings, marcasite 10
95	97½	Light brown-gray dolomite, gray & white chert 94-6, limonite 2, marcasite 8
97½	100	Light brown-gray dolomite, gray dolomite 90-10, trace gray & white chert, limonite 1, marcasite 5 **GRAY** - 99.7
100	102½	Gray dolomite, marcasite 3
102½	105	Gray dolomite, marcasite 1½
105	112½	Gray dolomite, marcasite 2
112½	115	Gray dark-speckled dolomite, gray clay 1, marcasite 2 **BLUE** - 112½
115	117½	Light gray dark-speckled dolomite, marcasite 4
117½	120	Gray dark-speckled dolomite, gray clay 1, marcasite 6
120	122½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 10 **OIL** - 120½
122½	125	(Some coarse cuttings) Gray dolomite, brown shale 99-1, some fossils, marcasite 20
125	127½	Light gray fossils, dark brown shaly limestone 80-20, marcasite 25

Continued

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 141~~
Hole No. 1 (Continued)
Collar Elevation: 969.30'
Depth of Hole: 146.0' (Measurement by steel tape)
Location: Vincent Pinch

Date completed: 9/26/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
127½	130	Gray & gray-brown dolomitic limestone, gray clay 60-40, few specks phosphate, marcasite 8 — CLAY - 129
130	132½	Brown dolomitic limestone, gray clay & green shale 90-10, marcasite 15 — GLASS - 131
132½	135	Brown dolomitic limestone, brown shale 99-1, some fossils, marcasite 25
135	137½	Brown dolomitic limestone, brown shale 96-4, considerable fossils, marcasite 35
137½	140	Brown dolomitic limestone, brown shale 98-2, marcasite 20
140	142½	Brown dolomitic limestone, dark brown shale 98-2, marcasite 30
142½	145	Gray dolomitic limestone, brown dolomitic limestone 95-5, trace brown shale, marcasite 10 — McGREGOR - 142½
145	146	Gray dolomitic limestone, little "Glassrock" ravelling, marcasite 3

Water table: 41'

Depth From	Depth To	Assays ZnS	Assays FeS_2	Assays PbS
70	75	0.75	15.30	nil.
75	77½	0.50	23.7	nil.
77½	80	0.75	30.1	nil.
80	82½	0.60	18.3	nil.
82½	85	0.75	19.2	nil.
85	87½	0.70	12.5	nil.
87½	90	0.70	6.9	nil.
120	122½	0.50	7.5	nil.
122½	125	0.65	15.7	nil.
125	127½	0.60	27.5	nil.
127½	130	0.55	22.8	nil.
130	132½	0.35	17.2	nil.
132½	135	0.60	16.3	nil.
135	137½	0.45	17.2	nil.
137½	140	0.30	9.7	nil.
140	142½	0.50	18.3	nil.
142½	145	0.40	10.5	nil.

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 142~~
Hole No. 2
Collar Elevation: 970.68'
Depth of Hole: 140.0' (Measurement by steel tape)
Location: Vincent Pinch

Date completed: 9/30/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Dark buff clay, brown chert 99-1, trace limonite	
10	15	Dark buff clay, brown chert 60-40	
15	20	Buff dolomite, brown & gray-brown chert 80-20, trace limonite	
20	30	Buff dolomite, brown & gray-brown chert 75-25, trace limonite	
30	40	Buff dolomite, gray-brown chert 90-10, limonite 1/10	
40	50	Buff dolomite, brown chert 96-4, trace limonite	
50	60	Buff dolomite, brown & gray-brown chert 96-4, trace limonite	
60	70	Buff dolomite, tan chert 98-2, thin trace limonite	
70	80	Buff dolomite, tan chert 97-3	
80	90	Buff dolomite, brown-tan chert 88-12	
90	95	Buff-brown dolomite, brown & gray chert 97-3, marcasite 2	
95	100	Gray dolomite, trace buff dolomite, marcasite 8/10	GRAY - 95
100	105	Gray dolomite, buff dolomitic ravellings 10, marcasite 4/10	
105	110	Gray dolomite, buff dolomitic ravellings 15, marcasite 2	
110	112½	Gray dark-speckled dolomite, trace gray clay, marcasite 3/10	BLUE -110
112½	115	Gray dark-speckled dolomite, trace gray clay, marcasite 4/10	
115	117½	Gray dark-speckled dolomite, gray clay 1, marcasite 3/10	
117½	120	Gray dark-speckled dolomite, marcasite 2/10	
120	122½	Light brown fossiliferous dolomitic limestone, marcasite 5/10	OIL -120
122½	125	Light brown dolomitic limestone, dark brown shaly limestone 95-5, marcasite 1½, few specks galena	
125	127½	Brown & dark brown dolomitic limestone, marcasite 3/10, galena 1/10	
127½	130	Gray-brown dolomitic limestone, gray clay & shale 60-40, marcasite 6/10, trace galena	CLAY - 129
130	132½	Brown-gray dark-speckled dolomitic limestone, bentonite 3, marcasite 3/10, few specks galena	
132½	135	Dark brown dolomite, marcasite 3/10	GLASS - 132½
135	137½	Dark brown dolomite, black shale 97-3, marcasite 3/10	
137½	140	Gray dolomitic limestone, brown dolomite 60-40, marcasite 3/10	McGREGOR - 138½

Water table: 43'

2429

~~Serial No. 143~~
Hole No. 3
Collar Elevation: 882.47'
Depth of Hole: 72.5' (Measurement by steel tape)
Location: Vincent Pinch

Lafayette County
~~Sec. Ref. 152~~

Date completed: 10/9/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Brown clay & coarse creek gravel	
10	15	Coarse creek gravel, few specks limonite & marcasite	
15	20	Buff dolomite, various colored chert 50-50, limonite 2/10, trace marcasite	
20	25	Brown-buff dolomite, various colored chert 60-40, trace limonite, few specks	
25	30	Brown dolomite, buff, brown & red chert 90-10, trace limonite	
30	35	Brown-gray dolomite, buff, brown, tan & red chert 93-7, trace calcite, trace marcasite, specks galena	GRAY - 30 ?
35	40	Brown-gray dolomite, trace marcasite, few specks green shale	
40	45	Tan fossiliferous limestone, green shale 5, trace gray dark-speckled dolomite	OIL - 40
45	47½	Tan fossiliferous limestone, few specks marcasite	
47½	50	Tan fossiliferous limestone, brown shaly limestone 96-4, thin trace marcasite, specks galena	
50	52½	Gray-brown limestone, trace marcasite, specks galena	
52½	55	Brown & dark brown limestone, few specks green shale, few specks marcasite	
55	57½	Light gray fossiliferous limestone, few specks marcasite	
57½	60	Gray-brown limestone, dark gray fossiliferous limestone 95-5, trace bentonite, few specks marcasite	CLAY - 57½
60	62½	Brown limestone & dolomitic limestone, trace dark brown shale, few specks marcasite	GLASS - 58
62½	65	Brown dolomitic limestone, marcasite 1/10	
65	67½	Dark brown limestone, trace marcasite	
67½	70	Brown limestone, few specks marcasite	
70	72½	Gray dolomitic limestone, brown limestone 80-20, few specks marcasite	McGREGOR - 70½

Water stood at 7½ ft. from collar until hole reached McGregor formation, then it dropped to 23½ ft. from collar.

Driller left a 10' length of 8" casing in this hole.
Just a trace of "BLUE" formation detected at 40'.
OILROCK & GLASSROCK were very firm.

243a

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 144~~
Hole No. 4
Collar Elevation: 907.49'
Depth of Hole: 105.2' (Measurement by steel tape)
Location: Vincent Pinch

Date completed: 10/13/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil	
5	10	Black soil, gray shale, gray-brown chert 50-35-15	
10	15	Brown-buff dolomite, gray-brown chert 92-8, few specks limonite (Coarse cuttings)	
15	20	Buff dolomite, gray-brown chert 98-2, specks limonite	
20	25	Buff dolomite, light brown & tan chert 94-6	
25	30	Buff dolomite, tan chert 90-10, brown clay (sloughing) 2, trace limonite	
30	40	Dark buff dolomite, trace limonite	
40	50	Dark buff dolomite, tan chert 97-3, thin trace limonite	
50	55	Dark buff dolomite, tan & brown chert 80-20, few specks limonite	
55	60	Buff dolomite, tan & brown chert 90-10, few specks limonite	
60	65	Gray-buff dolomite, marcasite 2	GRAY - 62½
65	70	Gray dolomite, marcasite 1	
70	75	Gray dolomite, marcasite 3	
75	77½	Brown-gray dolomite, marcasite 8	
77½	80	Gray dark-speckled dolomite, marcasite 8	BLUE - 77½
80	82½	Gray dark-speckled dolomite, marcasite 15	
82½	85	Gray dark-speckled dolomite, buff dolomite 80-20, marcasite 10	IL-84½
85	87½	Buff dolomite, marcasite 40	
87½	90	Brown dolomite, marcasite 22	
90	92½	Tan fossiliferous limestone, brown shale 97-3, marcasite 16	
92½	95	Tan fossiliferous limestone, marcasite 14, specks galena	
95	97½	Green clay & dark gray fossiliferous limestone, tan limestone 60-40, marcasite 10	CLAY - 96
97½	100	Light brown dolomitic limestone, marcasite 15	
100	102½	Brown dolomitic limestone, marcasite 20	
102½	105	Gray dolomitic limestone, brown dolomitic limestone 80-20, marcasite 7	McGREGOR - 103

Water table: 18'

Depth From	Depth To	Assays ZnS	FeS_2	PbS
80	82½	0.50	13.10	nil.
82½	85	1.05	9.50	nil.
85	87½	0.25	35.90	nil.
87½	90	0.40	23.90	nil.
90	92½	0.35	17.80	nil.
92½	95	0.25	10.80	nil.
95	97½	0.30	13.80	nil.
97½	100	0.45	17.40	nil.
100	102½	0.25	15.50	nil.
102½	105	nil.	9.50	nil.

2440

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 145~~
Hole No. 5
Collar Elevation: 953.35'
Depth of Hole: 156.0' (Measurement by steel tape)
Location: Vincent Pinch

Date completed: 10/17/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	5	Brown soil
5	10	Buff clay
10	15	Dark buff clay
15	20	Dark buff dolomite, gray-brown & brown chert 80-20
20	25	Buff dolomite, gray-brown chert 95-5
25	35	Buff dolomite, gray-brown chert 97-3, specks limonite (coarse cuttings)
35	40	Buff & dark buff dolomite, few specks brown chert
40	45	Buff dolomite, tan & gray-brown chert 85-15
45	50	Buff dolomite, few specks gray-brown chert
50	60	Buff dolomite, tan chert 96-4
60	70	Buff dolomite, tan chert 95-5, few specks limonite
70	80	Dark buff dolomite, tan chert 99-1, trace reddish-brown clay, limonite 1/10
80	90	Dark buff dolomite, tan chert 93-7, trace limonite
90	95	Dark buff dolomite, tan & brown chert 90-10, thin trace limonite
95	100	Dark buff limonite-speckled dolomite, brown & tan chert 80-20 few specks marcasite
100	105	Brown dolomite, trace calcite, marcasite 3/10
105	110	Brown dolomite, gray dolomite 70-30, marcasite 4, trace calcite — GRAY - 108½
110	112½	Gray dolomite, buff dolomitic ravellings 1, marcasite 1½, trace calcite
112½	115	Dark gray dolomite, buff dolomitic ravellings 8, marcasite 1/10, thin trace galena, specks blende
115	117½	Brown-gray dolomite, trace calcite, buff dolomitic ravellings 5, marcasite 1/10
117½	120	Brown-gray calcareous dolomite, trace marcasite
120	122½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, marcasite 3/10 — BLUE - 121
122½	125	Gray dark-speckled dolomite, buff dolomitic ravellings 10, marcasite 1/10
125	127½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 8, marcasite 1/10
127½	130	Brown fossiliferous limestone, gray dark-speckled dolomite 80-20, trace marcasite — OIL - 128
130	135	Tan & brown fossiliferous limestone, few specks marcasite
135	140	Brown limestone & dark brown dolomitic limestone, some fossils, few specks marcasite
140	142½	Gray fossiliferous dolomitic limestone, green shale & clay 80-20, thin trace marcasite — CLAY - 142
142½	145	Gray-brown limestone, bentonite, dark gray fossiliferous limestone 40-40-20, trace marcasite
145	147½	Dark brown dolomite, marcasite 1/10
147½	150	Dark brown dolomite, trace marcasite — GLASS - 144
150	152½	Dark brown dolomite, black shale 1, marcasite 5, calcite 1
152½	155	Gray dolomite limestone, brown dolomite 60-40, marcasite 2/10, specks calcite — McGREGOR - 153½

Water table: 71'

2959

Lafayette County
~~Sec. Ref. 211~~

~~Serial No. 2~~
Hole No. 2
Collar Elevation: 1009.49'
Depth of Hole: 133.0' (Measurement by steel tape)
Location: Snyder

Date completed: 11/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Buff clay
5	20	Ochre clay
20	25	Ochre clay, trace gray-brown chert
25	30	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, trace limonite
30	35	Buff dolomite, gray-brown chert 94-6, trace limonite
35	40	Buff dolomite, gray-brown chert 93-7, trace limonite
40	45	Buff dolomite, trace gray-brown chert, a speck red chert, a speck limonite
45	50	Buff dolomite, gray-brown & tan chert 98-2, a speck limonite
50	55	Buff dolomite, gray-brown & tan chert 92-8, a speck limonite
55	60	Buff dolomite, tan chert 96-4, trace limonite
60	65	Buff dolomite, & brown-buff dolomite, gray-brown & tan chert 95-5, few specks red chert, trace limonite
65	70	Buff dolomite, tan, gray-brown & red chert 91-9, trace red-buff clay
70	75	Buff dolomite, tan, gray-brown & buff chert 93-7, red-brown clay 2
75	80	Coarse cuttings: brown-buff dolomite, tan, gray-brown & buff chert 88-12, buff clay 1
80	85	Buff dolomite, tan, gray-brown & buff chert 96-4, red-brown clay 2, buff clay 1
85	90	Buff dolomite, gray-brown & tan chert 98-2, red-brown clay 1
90	95	Buff dolomite, tan & buff chert 97-3, red-brown clay 5, trace dark gray clay
95	100	Buff dolomite, tan & gray chert 99-1, trace red-brown clay
100	105	Buff dolomite, tan & gray-brown chert 96-4, red-brown clay 4
105	110	Gray-buff dolomite, tan & gray chert 97-3
110	115	Dark buff dolomite, dark buff clay 70-30, trace tan chert (dolomite was limonite-speckled) BLUE - 110?
115	117½	Brown-gray dolomite limestone, tan fossiliferous limestone, dark buff limonite-speckled dolomite 80-15-5, marcasite 3/10 OIL - 117
117½	120	Pale brown limestone, dark brown dolomite 1, few fossils, marcasite 3/10
120	122½	Pale brown limestone, dark brown shaly limestone 97-3, marcasite 2/10
122½	125	Pale brown limestone, green clay 60-40, trace phosphate, marcasite ½ CLAY - 124
125	127½	Brown dolomite, calcite 3, trace gray clay, marcasite 1 GLASS - 125½
127½	130	Brown dolomite, gray dolomitic limestone 95-5, buff dolomitic ravellings 8, marcasite ½
130	132½	Ravellings from overlying beds, gray dolomitic limestone 75-25, marcasite 1/10 McGREGOR - 129.9

Very loose hole; set 105' of small pipe and drilled from 105 to 132½ with small tools.

Water table: 63'

2769

~~Serial No. 3~~
Hole No. 3
Collar Elevation: 988.01'
Depth of Hole: 105' (Measurement by steel tape)
Location: Snyder

Lafayette County
~~Sec. Ref. 211~~

Date completed: 11/21/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Dark brown/buff clay-buff & red chert 95-5
10	15	Dark brown/buff clay-buff, brown & red chert 92-8, limonite ½
15	20	Buff dolomite-buff, brown, red & tan chert 60-40, a little brown/buff clay, limonite 1/10
20	25	Buff dolomite-tan & gray/brown chert (coarse) 75-25, brown/buff clay 10, trace limonite
25	30	Buff dolomite-tan & gray/brown chert 96-4, (a few coarse cuttings)
30	35	Buff & dark buff dolomite-tan & gray/brown chert 92-8, trace brown/buff clay (few coarse cuttings)
35	40	Buff & dark buff dolomite-trace tan chert (some coarse cuttings)
40	45	Dark buff dolomite-tan & gray/brown chert 95-5 (coarse cuttings)
45	50	Buff & dark buff dolomite-tan & gray/brown chert 85-15 (coarse cuttings)
50	55	Buff dolomite-tan, gray/brown & buff chert 60-40 (coarse cuts.)
55	60	Dark buff dolomite-tan gray/brown & buff chert 85-15, (fairly coarse cuttings)
60	65	Dark buff dolomite-tan, gray/brown & buff chert 88-12, trace brown clay (fairly coarse cuttings) GRAY 65 ?
65	70	Dark buff dolomite-tan, gray/brown & buff chert 80-20, brown clay 3 (fairly coarse cuttings)
70	75	Buff & dark buff dolomite-tan & gray/brown chert 80-20 (extra coarse cuttings)
75	80	Buff dolomite-gray/brown & tan chert 90-10, buff clay 10 (coarse cuttings) BLUE 80 ?
80	82½	Dark buff dolomite-gray/brown & tan chert 80-20, dark brown dolomitic limestone 10 (coarse cuttings)
82½	85	Dark buff dolomite-gray/brown & tan chert 60-40, dark brown dolomitic limestone 15
85	87½	Buff dolomite-gray/brown & tan chert 75-25, trace red chert, dark brown dolomitic limestone 30, buff clay 5 (extra coarse cuttings) OIL 87½ ?
87½	90	Dark buff dolomite-tan & gray/brown chert 95-5, brown clay 10, trace quartz (extra coarse)
90	92½	Dark buff dolomite-tan chert 90-10, dark brown shale 10, brown clay 2, a speck quartz, few fossils, thin trace marcasite
92½	95	Blue shale-brown shale 60-40, dark buff dolomite 20, tan & gray/brown chert 5, trace phosphate, trace marcasite
95	97½	Buff clay, buff dolomite & chert ravellings 80, green clay & blue shale 20, thin trace marcasite GLASS 97½
97½	100	Ravellings from overlying beds-brown limestone (Glassrock) 99-1, few specks marcasite
100	102½	Dark brown limestone-dark buff dolomite & buff clay 70-30, dark brown shale 2 (coarse cuttings) McGREGOR 102½
102½	105	Gray dolomitic limestone-brown limestone 95-5, dark buff dolomitic ravellings 10

Extremely soft hole; impossible to pick any "tops" excepting McGregor with any degree of accuracy.

Water table: 39½'

247a

Laf[illegible]tte County
~~Sec. Ref. 211~~

~~Serial No. 4~~
Hole No. 4
Collar Elevation: 1017.89'
Depth of Hole: 135' (Measurement by steel tape)
Location: Snyder

Date completed: 11/24/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil and buff clay
5	10	Buff clay
10	15	Brown/gray clay
15	20	Dark brown/gray clay
20	25	Buffish/gray clay-some coarse pieces brown chert
25	30	Buffish/gray clay-few pieces gray/brown chert
30	35	Gray and buffish/gray clay, trace chert
35	40	Dark buff clay-buff chert 95-5
40	45	Dark buff dolomite-gray/brown and buff chert 80-20, little buff clay, trace limestone (CRS CUTS)
45	50	Buff dolomite-gray/brown and dark buff chert 65-35, trace limonite
50	55	Buff dolomite-gray brown chert 85-15, trace tan chert, few specks limonite
55	60	Buff dolomite-gray/brown tan and buff chert 88-12, few specks limonite
60	65	Dark buff dolomite-gray/brown and tan chert 94-6, a speck limonite
65	70	Dark buff dolomite-gray brown chert 97-3, a speck limonite
70	75	Dark buff dolomite-gray/brown chert 92-8
75	80	Dark buff dolomite and brown/buff dolomite-gray/brown chert 94-6, trace tan chert
80	85	Buff dolomite-light gray brown, tan and buff chert 80-20
85	90	Buff dolomite-buffish/tan and gray brown chert 82-18
90	95	Buff dolomite-tan chert 97-3
95	100	Buff dolomite-tan chert 99-1
100	105	Buff dolomite-gray dolomite 80-20, trace dark buff clay, a speck marcasite GRAY - 100
105	107½	Buff dolomite-gray dolomite 80-20, gray clay 2, a speck marcasite
107½	110	Gray dolomite-buff dolomite 60-40, a speck marcasite
110	112½	Gray dolomite-buff dolomite 80-20, trace marcasite BLUE - 112½
112½	115	Gray dark/speckled dolomite-buff dolomite 70-30, marcasite 1/10
115	117½	Dark gray dark speckled dolomite, trace buff dolomite-trace marcasite
117½	120	Buff dolomite-gray dark speckled dolomite 70-30, trace calcite, trace marcasite
120	122½	Brown dolomitic limestone-gray dark speckled dolomite-buff dolomite 75-20-5, trace marcasite OIL - 120.5
122½	125	Light brown dolomitic limestone-brown shaly limestone 98-2, marcasite 1/10
125	127½	Brown dolomitic limestone-brown shaly limestone 80-20, trace gray clay, trace marcasite
127½	130	Green clay-gray/brown dolomitic limestone 80-20, marcasite 2/10, few specks phosphate CLAY - 128 GLASS - 130
130	132½	CRS. CUTS: Pale brown dolomite-trace calcite, trace marcasite
132½	135	SOME CRS CUTS: Gray dolomitic limestone, trace marcasite McGREGOR - 132½

Water table: 77'

Lafayette County
Sec. ~~Ref. 211~~

~~Serial No. 6~~
Hole No. 5
Collar Elevation: 1010.99'
Depth of Hole: 130.0'
Location: Wm. F. Snyder

Date completed: 12/3/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil & buff clay	
5	15	Brown-buff clay	
15	20	Buff clay	
20	25	Dark buff clay, few specks limonite	
25	30	Extra Coarse Cuttings: Buff dolomite, brown & tan chert, buff clay 80-10-10, few specks limonite	
30	35	Buff clay, buff dolomite (coarse cuttings), brown & tan chert 80-15-5, few specks limonite	
35	40	Buff clay, buff dolomite (coarse cuttings), brown & tan chert (coarse cuttings) 60-25-15, a speck limonite	
40	45	Extra Coarse Cuttings: Buff dolomite, brown chert 50-50	
45	50	Coarse Cuttings: Buff limonite-speckled dolomite, brown & tan chert 80-20	
50	55	Coarse cuttings: Dark buff dolomite, brown & tan chert 75-25	
55	60	Coarse cuttings: Buff dolomite, brown, tan & buff chert 85-15	
60	65	Buff dolomite, brown & buff chert 95-5, trace limonite	
65	70	Buff dolomite & dark buff limonite-speckled dolomite, gray-brown chert 96-4, few specks limonite	
70	75	Buff dolomite & dark buff dolomite, gray-brown & tan chert 88-12, few specks limonite	
75	80	Buff dolomite, tan & gray-brown chert 82-18, few specks limonite	
80	85	Buff dolomite, tan & gray-brown chert 88-12	
85	90	Buff dolomite, tan & light gray-brown chert 92-8, trace gray-brown cave clay	
90	95	Dark buff limonite-speckled dolomite, tan & gray-brown chert 93-7, trace fossils	
95	100	Buff & dark buff limonite-speckled dolomite, trace tan chert, trace fossils	
100	105	Buff & dark buff dolomite, few specks tan chert, few specks limonite	
105	110	Gray-buff dolomite, chert ravellings 15	GRAY ??????
110	115	Gray-buff dolomite, chert ravellings 5	BLUE ??????
115	120	Brown dolomitic limestone, buff dolomitic ravellings 90-10, trace dark brown shale, trace gray dark-speckled dolomite, marcasite 1/10	OIL 115.0
120	122½	Brown fossiliferous dolomitic limestone, dark buff dolomite 95-5, brown clay 1, trace marcasite	
122½	125	Green clay & dark baritic fossiliferous limestone, trace phosphate, marcasite 3/10	CLAY 122.5
125	127½	Dark brown limestone, dark buff dolomitic ravellings (Coarse cuttings) 60-40, trace marcasite	GLASS 125.0
127½	130	Gray dolomitic limestone, dark brown dolomitic limestone 80-20, some buff dolomitic ravellings, trace marcasite	McGREGOR 128.0

Water table: 66'

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 17~~
Hole No. 2
Collar Elevation: 1017.73'
Depth of Hole: 147.5'
Location: Arnold J. Splinter

Date completed: 10/17/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Buff clay
10	30	Buffish/brown clay
30	35	Buff clay-buff dolomite 98-2, limonite ½
35	40	Coarse cuttings: Light buff dolomite-gray/brown & tan chert 98-2, limonite ½
40	45	Coarse cuttings: Light buff dolomite-gray/brown chert 92-8, limonite 4/10
45	50	Coarse cuttings: Light buff dolomite-tan chert 95-5, limonite 3/10
50	55	Light buff dolomite-light gray chert 90-10, limonite 1/10
55	60	Light buff dolomite-light gray chert 99-1, limonite 2/10
60	70	Buff dolomite-gray/brown & tan chert 88-12, limonite 1
70	75	Buff dolomite-tan chert 85-15, limonite 2/10
75	80	Few extra coarse cuttings: Buff dolomite-tan chert 97-3, limonite 4/10
80	85	Buff dolomite-tan chert 96-4, limonite 2/10
85	90	Coarse cuttings: Buff dolomite-tan chert 97-3, limonite 1
90	95	Buff dolomite-tan chert 98-2, trace fossils, limonite 5
95	100	Coarse cuttings: Buff dolomite-tan & gray/brown chert 60-40, limonite 7
100	105	Coarse cuttings: Buff dolomite-tan chert 94-6, limonite 2
105	107½	Coarse cuttings: Buff dolomite-tan chert 88-12, limonite 4
107½	110	Extra coarse cuttings: Buff dolomite-tan & gray/brown chert 50-50, limonite 3
110	112½	Extra coarse cuttings: Buff dolomite-tan & gray/brown chert 60-40, limonite 2
112½	115	Some coarse cuttings: Buff dolomite-gray/brown chert 98-2, limonite 6
115	117½	Fine cuttings: Buff dolomite-few specks chert, limonite 2
117½	120	Buff dolomite-tan & gray/brown chert 97-3, limonite 2, few specks marcasite
120	122½	Buff dolomite-trace tan chert-red/brown crevice clay 1, limonite 1
122½	125	Buff dolomite-red/brown crevice clay, limonite 3/10
125	127½	Buff dolomite-trace green clay, limonite 1/10 — GRAY 125
127½	130	Buff dolomite-limonite ½
130	132½	Buff calcareous dolomite-gray/buff dolomite-trace red/brown crevice clay, limonite 2/10
132½	135	Coarse cuttings: Buff & gray/buff calcareous dolomite-limonite 4/10 (coarse)
135	137½	Some coarse cuttings: Gray/buff dolomite & buff dolomite-trace crevice clay, trace calcite, few fossils, limonite 1/10
137½	140	Buff dolomite-gray dark/speckled dolomite 5, trace calcite, limonite 1/10 — BLUE 139
140	142½	Buff dolomite-gray dark/speckled dolomite & gray clay 70-30, limonite 1/10, trace marcasite — OIL none
142½	145	Buff dolomite-gray dark/speckled dolomite-green clay 90-5-5, few specks phosphate, trace brown clay
145	147½	Buff dolomite-gray dark/speckled dolomite ravellings-bentonite, trace dark brown dolomite (glass), marcasite 4/10

Continued

250a

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 17~~
Hole No. 2 (Continued)
Collar Elevation: 1017.73'
Depth of Hole: 147.5'
Location: Arnold J. Splinter

Date completed: 10/17/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
		CLAYBED 144½ ?
		GLASSROCK 146 ?
		ESTIMATED McGREGOR 150 ?

Water table: 77'

Depth From	Depth To	Remarks
35	40	Fairly solid
42	45	Soft
45	50	Real hard
70	75	Hit water
85	95	Sand caving in
103	119	Real loose
120	130	Loose and caving badly
147½	150	Hole filled up 30 feet while drilling

Set 32 feet of 8" casing
Set small casing to 120
Strong flow water at 132½
Hole stopped due to extreme looseness of formations.
Impossible to measure it.
Hole was advanced to about 149 feet and it caved full to 25 feet from bottom.

Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 18~~
Hole No. 3
Collar Elevation: 1010.27'
Depth of Hole: 144.0' (Measurement by steel tape)
Location: Arnold J. Splinter

Date completed: 10/22/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Brown & buff clay
10	15	Light brown clay
15	20	Brown clay, trace tan chert
20	25	Brown & dark buff clay, buff chert 5
25	30	Dark buff clay, buff chert 2
30	35	Dark buff dolomite, buff chert 96-4
35	40	Light gray chert (coarse), buff dolomite 60-40
40	45	Buff dolomite, light gray chert 80-20
45	50	Buff dolomite, light gray chert 90-10
50	60	Buff dolomite, light gray & gray-brown chert 90-10
60	70	Buff dolomite, light gray & tan chert 96-4
70	75	Buff dolomite, light gray chert 98-2, (a few coarse cuttings)
75	80	Coarse cuttings: buff & dark buff dolomite, buff & gray-brown chert 99-1
80	90	Coarse cuttings: buff dolomite, buff & gray-brown chert 80-20
90	100	Some extra coarse cuttings: buff dolomite, tan & gray-brown chert 85-15, trace red-brown clay, trace dark gray clay
100	102½	Extra coarse cuttings: buff dolomite, gray-brown chert 97-3
102½	105	Coarse cuttings: buff dolomite, gray-brown chert 94-6
105	107½	Extra coarse cuttings: buff dolomite, gray & tan chert 95-5
107½	110	A few extra coarse cuttings: buff & dark buff dolomite, gray & tan chert 96-4, red-brown clay 2, gray-buff dolomite 5 GRAY-109½
110	112½	Extra coarse cuttings: dark buff dolomite, tan chert 92-8, red-brown clay ½
112½	115	Coarse cuttings: buff dolomite, tan & gray-brown chert 80-20 red-brown clay 1
115	117½	Coarse cuttings: dark buff dolomite, tan chert 75-25, trace red-brown clay
117½	120	Coarse cuttings: buff dolomite, tan & gray-brown chert 65-35
120	122½	Fine cuttings: buff dolomite, buff clay 80-20, tan chert 3, red-brown clay 3
122½	125	Coarse cuttings: dark buff dolomite, tan chert 82-18, some dark-speckled dolomite, trace fossils BLUE - 122½
125	127½	Coarse cuttings: dark buff dark-speckled dolomite, tan chert 80-20, trace sand
127½	130	Coarse cuttings: buff dolomite, dark buff dark-speckled dolomite, tan chert 50-40-10, some fossils, gray-buff clay 5
130	132½	Coarse cuttings: buff dolomite & tan chert ravellings, tan fossiliferous limestone, some buff dark-speckled dolomite, trace brown shale, few specks marcasite OIL - 130
132½	135	Green clay, little buff dolomite & chert ravellings, some fossils, trace phosphate, thin trace marcasite CLAY - 134
135	137½	Bentonite & green shale, considerable buff dolomitic ravellings, some fossils, marcasite 3/10

Continued

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Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 18~~
Hole No. 3 (Continued)
Collar Elevation: 1010.27'
Depth of Hole: 144.0' (Measurement by steel tape)
Location: Arnold J. Splinter

Date completed: 10/22/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
137½	140	Buff dolomitic ravellings, brown limestone (GLASSROCK) 97-3, some green clay sloughing, trace marcasite
		GLASS - 137½
140	143	Buff dolomitic ravellings, little tan chert, brown limestone, gray dolomitic limestone 50-50, few specks marcasite McGREGOR - 141½

Water table: 68'

Depth From	Depth To	Remarks
75	80	Struck water
75	85	Loose & fractured
112½	117½	Caving badly
120	140	Soft, loose & caving badly
140	143	Hard formation. Strong water

Formation "Tops" are very uncertain, due to the excessive ravelling

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Lafayette County
~~Sec. Ref. 210~~

~~Serial No. 19~~
Hole No. 4
Collar Elevation: 1013.22'
Depth of Hole: 134.5' (Measurement by steel tape)
Location: Arnold J. Splinter

Date completed: 10/25/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	15	Brown clay
15	20	Dark buff clay
20	25	Dark buff clay, buff dolomite 95-5
25	30	Buff clay, buff dolomite 60-40, few specks white chert
30	40	Buff dolomite, buff clay 90-10, gray & white chert 8
40	50	Buff dolomite, buff clay 95-5, gray & white chert 6
50	60	Buff dolomite, gray-brown chert 97-3, few specks limonite
60	70	Buff dolomite, gray-brown & white chert 95-5, trace limonite
70	75	Buff dolomite, gray & buff chert 96-4, limonite 1/10
75	80	Coarse cuttings: buff dolomite, brown & buff chert 60-40, limonite 2/10
80	85	Coarse cuttings: buff dolomite, brown-gray & buff chert 82-18, limonite 1/10
85	90	Buff limonite-speckled dolomite, gray-brown & tan chert 90-10, trace free limonite
90	95	Buff dolomite, gray-brown & white chert 93-7, limonite 1/10
95	100	Buff dolomite & gray-buff dolomite, green shale ½, some chert ravellings, limonite 1/10 — GRAY - 95.0
100	105	Gray-buff limonite-speckled calcareous dolomite, some chert ravellings, trace limonite
105	110	Gray-buff dolomite, some chert ravellings, limonite 1/10
110	112½	Coarse cuttings: dark buff limonite-speckled dolomite, gray dark-speckled dolomite 90-10, trace limonite — BLUE - 110.0
112½	115	Gray dark-speckled dolomite, buff dolomitic ravellings 65-35, calcite 1, thin trace limonite
115	117½	Dark gray dark-speckled dolomite, buff dolomitic ravellings 90-10, few specks marcasite
117½	120	Brown fossiliferous limestone, gray dark-speckled dolomite 95-5, marcasite 2/10, trace calcite — OIL - 117.6
120	122½	Brown dolomitic limestone, marcasite 1/10
122½	125	Green clay, brown dolomitic limestone 80-20, trace phosphate, marcasite 1/10 — CLAY - 123.0
125	127½	Dark brown dolomite, black shale 65-35, trace marcasite — GLASS - 125.0
127½	130	Gray dolomitic limestone (coarse cuttings), trace brown dolomite, trace marcasite — McGREGOR - 127.5
130	133	Gray dolomitic limestone, few specks marcasite

Water table: 73'

Depth From	Depth To	Remarks
0	20	Clay
20	35	Sticky clay & small boulders
35	45	Hard with soft spots
45	75	Fairly hard

Hit water at 80-85 cut.
Strong water at 130'

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 99~~
Hole No. 1
Collar Elevation: 1016.25'
Depth of Hole: 135.0' (Measurement by steel tape)
Location: F. W. Wilkinson

Date completed 9/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann & Eastmoore
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Soil	
5	10	Brown-buff & gray clays	
10	20	Brown & buff clays	
20	25	Buff clay, some brown chert	
25	30	Brown clay, brown chert, buff dolomite 70-15-15	
30	40	Buff dolomite, brown & tan chert 90-10, few specks limonite	
40	50	Buff dolomite, gray & tan chert 85-15, trace buff clay, few specks limonite	
50	60	Buff clay & dolomite, gray & tan chert 97-3, few specks limonite	
60	70	Brown-buff dolomite, gray & tan chert 97-3, trace limonite	
70	80	Light brown-buff dolomite, brown & tan chert 97-3, trace limonite	
80	90	Light brown dolomite, brown chert 93-7, trace limonite	
90	95	Brown dolomite, gray dolomite 80-20, brown chert 1, trace limonite, few specks marcasite	GRAY - 94
95	97½	Gray dolomite, brown dolomite 25, trace marcasite, trace limonite	
97½	100	Gray-brown dolomite, trace marcasite	
100	102½	Gray dolomite, trace marcasite	
102½	105	Gray dolomite, gray dark-speckled dolomite 80-20, trace marcasite	BLUE - 104.5
105	110	Gray dark-speckled dolomite, trace marcasite	
110	112½	Gray dark-speckled dolomite, thin trace marcasite	
112½	115	Light brown & brown fossiliferous dolomitic limestone, green gray clay 60-40, marcasite 1/10	OIL - 112½
115	117½	Light brown & tan dolomitic limestone, trace marcasite	
117½	120	Light brown-buff dolomitic limestone, some dark brown limy shale, trace marcasite	
120	122½	Light brown dolomitic limestone, trace marcasite	GRAY - 125
122½	125	Gray-brown fossiliferous dolomitic limestone, marcasite ½	
125	127½	Gray clay, trace green shale, some dark brown & light brown dolomitic limestone, trace marcasite, trace phosphate	GLASS - 127½
127½	130	Brown dolomitic limestone, trace calcite, trace marcasite	
130	132½	Light brown limestone & brown dolomitic limestone, trace marcasite	
132½	135	Gray dolomitic limestone, light brown limestone & brown dolomitic limestone 80-20, trace marcasite	McGREGOR - 133

Water table: 60.5'

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 100~~
Hole No. 2
Collar Elevation: 990.62'
Depth of Hole: 112.0' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 9/15/52
Drilled by: Eagle-Picher, DMA
Logged by: Poehlmann
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Coarse cuttings buff dolomite, brown chert & brown clay
10	20	Buff dolomite, brown & gray chert 90-10
20	30	Buff dolomite, tan chert 98-2, few specks limonite
30	40	Buff dolomite, brown & tan chert 95-5, few specks limonite
40	50	Light buff dolomite, brown & tan chert 99-1, trace limonite
50	60	Buff dolomite, brown & tan chert 90-10, trace limonite
60	70	Pale brown dolomite, tan chert 97-3, trace limonite
70	75	Gray dolomite, light brown dolomite 80-20, trace limonite & marcasite GRAY - 71
75	77½	Gray dolomite, few specks light brown dolomite, few specks marcasite, few specks blende
77½	80	Gray-brown dolomite & light brown dolomite, few specks marcasite, specks blende
80	82½	Gray-brown & light brown dolomite, few specks marcasite
82½	85	Gray-brown & light brown dolomite, gray dark-speckled dolomite 60-40, few specks marcasite, specks blende BLUE - 84
85	87½	Gray dark-speckled dolomite, trace marcasite, few specks blende
87½	90	Gray dark-speckled dolomite, trace marcasite
90	92½	Gray dark-speckled dolomite, brown limestone 10, trace marcasite OIL - 92½
92½	95	Light brown limy dolomite, trace calcite, thin trace marcasite
95	97½	Light brown limy dolomite, calcite ½, thin trace marcasite
97½	100	Light brown limy dolomite, trace light brown clay, trace calcite, thin trace marcasite
100	102½	Light brown limy dolomite & light brown dolomitic limestone, gray clay 80-20, thin trace marcasite CLAY - 102
102½	105	Light gray clay, some brown limestone, thin trace marcasite
105	107½	Brown & light brown dolomitic limestone, few specks marcasite -GLASS -10
107½	110	Light brown & tan limestone & dolomitic limestone, trace dark brown limy shale, trace calcite, few specks marcasite
110	112½	Gray dolomitic limestone, brown dolomitic limestone 5, thin trace marcasite McGREGOR - 110

Water table: 47.5'

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Lafayette County
Sec. Ref. 209

~~Serial No. 101~~
Hole No. 3
Collar Elevation: 1014.27'
Depth of Hole: 142.6' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 9/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Light yellow clay
10	20	Dark buff clay
20	27	Dark buff clay, light yellow chert
27	30	Buff dolomite, gray-brown chert 90-10, trace limonite
30	40	Buff dolomite, gray-brown chert 91-9, few specks limonite
40	45	Buff dolomite, gray-brown chert 85-15, few specks limonite
45	60	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, specks limonite
60	70	Buff dolomite, tan chert 97-3
70	75	Buff dolomite, gray-brown & tan chert 98-2, trace limonite
75	80	Dark buff dolomite, gray-brown chert 80-20, limonite 3/10
80	85	Dark buff dolomite, gray-brown & tan chert 60-40, limonite 3/10, few specks galena
85	90	Buff-brown dolomite, tan & gray-brown chert 95-5, limonite 5/10
90	95	Buff-brown dolomite, gray dolomite 60-40, trace chert, limonite & marcasite 6/10 — GRAY - 93
95	97½	Gray dolomite, buff-brown dolomitic ravellings 50, chert 1, limonite 3/10, trace marcasite
97½	100	Gray dolomite, buff dolomitic ravellings 15, limonite 1/10, few specks marcasite
100	102½	Gray dolomite, buff dolomitic ravellings 5, trace chert, limonite & marcasite 5/10
102½	105	Gray dolomite, trace buff ravellings, trace calcite, limonite & marcasite 4/10
105	107½	Gray dolomite, limonite 7/10, trace marcasite
107½	110	Gray dark-speckled dolomite, some buff dolomite & chert ravellings, limonite 2, marcasite 3/10 — BLUE - 107½
110	112½	Gray dark-speckled dolomite, buff dolomitic ravellings 10, limonite 1, marcasite 3/10
112½	115	Gray dark-speckled dolomite, buff dolomite & chert ravellings, limonite & marcasite 3/10
115	117½	Gray dark-speckled dolomite, buff dolomite & chert ravellings, calcite 1, marcasite 4/10
117½	120	Light brown dolomitic limestone, dark brown shale 1, few specks green shale, marcasite & limonite 4/10 — OIL - 117½
120	122½	Brown dolomitic limestone, brown shale 98-2, trace calcite, marcasite ½, few specks blende
122½	125	Brown dolomitic limestone, brown shaly limestone 1, marcasite 3/10, thin trace blende
125	127½	Brown dolomitic limestone, brown shale 98-2, marcasite 3/10, trace blende
127½	130	Dark gray fossiliferous limestone & green shale, trace brown dolomitic limestone, marcasite 2/10 — CLAY - 127½

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 101~~
Hole No. 3 (Continued)
Collar Elevation: 1014.27'
Depth of Hole: 142.6' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 9/18/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
130	132½	Light brown dolomitic limestone, dark gray fossiliferous limestone & green shale 2, marcasite 2/10, few specks blende GLASS - 130½
132½	135	Brown dolomite, marcasite 1/10, few specks blende & galena
135	137½	Dark brown dolomite, calcite 4, marcasite 3/10, few specks blende
137½	140	Brown dolomitic limestone, gray dolomitic limestone, dark brown shale 55-40-5, marcasite 5/10, a speck blende McGREGOR - 139
140	142½	Gray dolomitic limestone, marcasite 3/10, few specks blende & galena

Firm ground in lower beds.

Water table: 71'

Lafayette County
Sec. Ref. 209

Serial No. 102
Hole No. 4
Collar Elevation: 956.92'
Depth of Hole: 82.5' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 9/19/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	1½	Mine tails
1½	4½	Soil
4½	16	Brown clay
16	20	Buff limonite-speckled dolomitic limestone, brown & tan chert 94-6, limonite 1
20	25	Coarse cuttings: buff limonite-speckled dolomitic limestone, tan & brown chert & buff chert 92-8, marcasite 2, limestone 1
25	30	Dark buff dolomite, brown & tan chert 95-5, (coarse cuttings) marcasite & limonite 18
30	35	Dark buff dolomite, brown chert 70-30, trace tan chert, marcasite & limonite 15
35	40	Dark buff dolomite, brown chert 65-35, limonite & marcasite 10
40	45	Dark buff dolomite, brown, tan & buff chert 60-40, limonite & partially oxidized marcasite 30 (fairly coarse cuttings)
45	50	Buff dolomite, brown & tan chert 96-4, limonite & marcasite 15 (coarse cuttings) GRAY - 45
50	55	Buff dolomite, slight trace green shale, chert ravellings 1, limonite & marcasite 10
55	60	Brown-buff dolomite, chert ravellings 5, limonite & marcasite 12 (coarse cuttings)
60	65	Extra coarse cuttings: brown dolomite, gray clay 80-20, marcasite 20, limonite 2, few coarse pieces of galena BLUE - 60

Continued

Lafayette County
~~See. Ref. 209~~

~~Serial No. 102~~
Hole No. 4 (Continued)
Collar Elevation: 956.92'
Depth of Hole: 82.5' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 9/19/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology	
65	67½	Brown dolomite 1, few chips buff dolomite ravelling, gray clay, marcasite 60, blende 2 (?), coarse cuttings	
67½	70	Brown clay & fossils, some buff dolomitic & chert ravellings, marcasite 15, blende 1 (?), trace galena	OIL - 67½
70	72½	Green clay & brown clay, trace brown dolomite, trace phosphate, blende ½, galena 4/10	CLAY - 71
72½	75	Brown dolomite, buff dolomitic ravellings 20, marcasite & limonite 15, galena 5/10, few specks blende	GLASS - 72½
75	77½	Brown dolomite, gray dolomitic limestone 80-20, buff dolomitic ravellings 30, coarse cuttings, marcasite & limonite 8, few specks blende & galena	McGREGOR - 77
77½	80	Buff dolomitic ravellings, gray dolomitic limestone 80-20, limonite & marcasite 5	
80	82½	Gray dolomitic limestone, buff dolomitic ravellings 80-20, limonite & marcasite 5	

Water table: 24'

Remarks
Limonite and marcasite in lower sections believed to be ravellings.
Bottom of hole was soft, easy drilling.

Depth From	To	Assays ZnS	FeS_2	PbS
40	45	0.75	31.10	nil.
60	65	0.75	38.00	nil.
65	67½	1.85	58.90	nil.
67½	70	1.00	31.20	nil.
70	72½	1.70	18.70	nil.
72½	75	0.70	15.70	nil.

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 104~~
Hole No. 5
Collar Elevation: 957.17'
Depth of Hole: 80' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 2/6/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Black soil	
10	15	Buff dolomite, gray-brown & buff chert 95-5, trace limonite, buff clay	
15	20	Buff dolomite, gray-brown & buff chert 92-8, some buff clay, trace limonite	
20	25	Buff dolomite, gray-brown chert 93-7, trace limonite, some buff clay	
25	30	Buff dolomite, gray-brown chert 94-6, some buff clay, trace limonite	
30	35	Buff dolomite, gray-brown chert 80-20, limonite 1	
35	40	Buff dolomite, gray-brown & tan chert 90-10, limonite 2, trace galena	
40	45	Buff dolomite, gray, gray-brown, tan & buff chert 91-9, brown-buff clay 2, limonite ½, few specks galena	
45	50	Buff dolomite, gray-brown & buff chert 82-18, limonite 2/10	GRAY - ?
50	55	Various colored chert, buff dolomite 60-40, limonite 1	
55	60	Various colored chert, gray dolomite 80-20, limonite & marcasite 1/10	
60	62½	Gray dark-speckled dolomite, various colored chert 70-30, marcasite 3	BLUE - 60
62½	65	Gray dark-speckled dolomite, various colored chert 75-25, marcasite 2	
65	67½	Various colored chert, limonite-stained clay, gray dark-speckled dolomite 70-20-10, marcasite 1, few specks blende & galena	OIL - 67½
67½	70	Various colored chert, brown dolomitic limestone & brown clay 90-10, marcasite & limonite 2, blende 1/10	
70	72½	Various colored chert, gray clay, brown dolomitic limestone 80-19-1, marcasite & limonite 2, blende 1/10	
72½	75	Gray clay	CLAY - 72
75	77½	Dark brown dolomitic limestone, buff dolomite & chert ravellings, 80-20, chocolate brown shale 1, marcasite 1, a speck blende	GLASS - 75
77½	80	Brown dolomitic limestone, gray dolomitic limestone 60-40, considerable ravellings of chert & buff dolomite, marcasite 7/10, a speck blende	McGREGOR - 79

Water table: 24'

~~Serial No. 105~~
Hole No. 6
Collar Elevation: 989.41'
Depth of Hole: 115.3'
Location: Fred W. Wilkinson

Lafayette County
~~Sec. Ref. 209~~

Date completed: 2/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Ochre-brown clay, few specks chert	
5	10	Dark ochre clay & dark brown clay, buff red & brown chert 5	
10	15	Dark ochre clay, brown & buff chert 5	
15	20	Dark ochre clay, brown & buff chert 7, few extra cuttings brown chert	
20	25	Buff dolomite, brown & dark buff chert 80-20, limonite 3	
25	30	Buff dolomite, gray-brown chert (coarse cuttings) 90-10, limonite 3/10	
30	35	Coarse cuttings: Buff dolomite, brown & gray-brown chert 92-8, limonite 2/10	
35	40	Coarse cuttings: Buff dolomite, brown & dark buff chert 96-4, limonite 1/10	
40	45	Coarse cuttings: Buff dolomite, brown & gray-brown chert 97-3, trace limonite	
45	50	Dark buff dolomite, brown & gray-brown chert 94-6, limonite 2/10 (some coarse cuttings dolomite)	
50	55	Dark buff dolomite, brown & gray-brown & dark buff chert 92-8, limonite 10	
55	60	Coarse cuttings: Dark buff chert & gray-brown chert, buff dolomite 80-20, limonite 18	
60	65	Coarse cuttings: Buff dolomite, dark buff chert & gray-brown chert 50-50, limonite 12, few specks marcasite	
65	70	Coarse cuttings: Buff dolomite, dark buff chert & gray-brown chert 70-30, limonite 8, few specks marcasite	
70	75	Coarse cuttings: Dark buff chert & brown chert, buff dolomite, gray dolomite 80-15-5, limonite 6, marcasite 1, few specks blende	GRAY - 70?
75	77½	Buff dolomite & chert ravellings, gray dolomite 95-5, limonite 20, blende 2 (?)	
77½	80	Buff dolomite & chert ravellings, gray dolomite 97-3, limonite 18, blende 8/10 (?)	
80	82½	Buff dolomite & chert ravellings, gray dolomite 50-50, limonite 5, marcasite 1, blende ½ (?)	
82½	85	Gray dark-speckled dolomite, buff chert ravellings 90-10, marcasite 2, blende 1/10	BLUE - 82½
85	87½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 65-35, marcasite & limonite 6, blende 6/10 (?)	
87½	90	Buff chert & dolomitic ravellings, gray dark-speckled dolomite 80-20, limonite 10, marcasite 10, blende 3 (?)	
90	92½	Buff dolomite, limonite-stained clay, gray-brown chert 65-30-5, limonite 10, marcasite 2, blende 1 (?)	OIL - 90 (?)
92½	95	Buff dolomite, limonite-stained clay 70-30, limonite 4, marcasite ½, blende ½ (?)	
95	97½	Buff dolomite & chert ravellings, brown dolomitic limestone 60-40, limonite & marcasite 10, blende ¼ (?)	
97½	100	Brown dolomitic limestone, buff dolomite & chert ravellings 85-15, limonite & marcasite 8, blende ½(?), few specks galena	CLAY - 100
100	102½	Gray clay, some ravellings marcasite 1, blende 4/10	

Continued

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 105~~
Hole No. 6 (Continued)
Collar Elevation: 989.41'
Depth of Hole: 115.3'
Location: Fred W. Wilkinson

Date completed: 2/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
102½	105	Brown dolomite, considerable ravellings from buff dolomite & chert, trace calcite, marcasite 8, blende 8/10 (?) GLASS - 102½
105	107½	Brown limestone, buff dolomite & chert ravellings 70-30, limonite & marcasite 15, blende 4, (considerable steel in sample)
107½	110	Gray dolomitic limestone, buff dolomite & chert ravellings 60-40, marcasite & limonite 4, blende 1 (considerable steel in sample) McGregor - 107½
110	112½	Gray dolomitic limestone, some ravellings, marcasite & limonite 5, blende 1, considerable steel in sample
112½	115	Gray dolomitic limestone, little ravellings, marcasite 2, blende 1 (considerable steel in sample)

NOTE: Considerable ravelling in this hole. Blende mineralization difficult to estimate due to great amount of limonite. Samples contaminated from 105 to 115, driller intentionally put some pieces of an old stove in the hole to make it cut straight. 90 to 95 does not appear to be OILROCK, but it cannot be anything else.

Driller's Remarks:

0	18	Clay & Gravel
18	45	Buff lime & brown flint - firm
45	50	Buff sandy lime & buff clay
50	60	Brown flint & red clay--soft & cavy
60	70	Brown flint & rust--soft
70	75	Gray lime & brown flint, rust & some speck of zinc
75	82½	Gray lime, some iron & few specks zinc
82½	87½	Blue ground--firm
87½	100	Oilrock--firm
100	102½	Gray clay, soft
102½	107½	Glassrock, hard
107½	115	Trenton lime, hard

Weak water at 60, another flow at 75 (not too strong)
Small crevice at 108'

Water table: 49'

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 105~~
Hole No. 6 (Continued)
Collar Elevation: 989.41'
Depth of Hole: 115.3'
Location: Fred W. Wilkinson

Date completed: 2/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Assays ZnS	FeS_2	PbS
75	77½	2.20	26.20	Nil.
77½	80	2.65	25.60	Nil.
80	82½	1.75	12.00	Nil.
82½	85	1.25	11.40	Nil.
85	87½	0.90	11.40	Nil.
87½	90	2.10	26.40	Nil.
90	92½	3.10	45.40	Nil.
92½	95	2.95	48.00	Nil.
95	97½	2.05	29.00	Nil.
97½	100	2.25	23.70	Nil.
100	102½	1.30	14.00	Nil.
102½	105	2.35	24.70	Nil.
105	107½	3.85	21.30	Nil.
107½	110	4.90	19.80	Nil.
110	112½	2.70	18.10	Nil.
112½	115	2.55	12.50	Nil.

Lafayette County
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Serial No. 106
Hole No. 7
Collar Elevation: 960.95'
Depth of Hole: 90.6' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 2/19/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	5	Brown clay
5	10	Brown-buff clay
10	15	Buff dolomite, tan, gray-brown & buff chert 88-12
15	20	Buff dolomite, tan, gray-brown & buff chert 90-10, few specks marcasite
20	25	Buff dolomite, tan, gray-brown & buff chert 90-10, limonite 5, marcasite 1
25	30	Buff dolomite, tan, gray-brown & buff chert 91-9, limonite 7, marcasite 2
30	35	Dark buff dolomite, gray-brown chert 95-5, limonite 3, marcasite 2
35	40	Dark buff dolomite, gray-brown & tan chert & buff chert 94-6, limonite 4, marcasite 1
40	45	Dark buff dolomite, gray-brown & tan chert 80-20, limonite 6 marcasite 1

Continued

Laf[illegible]tte County
~~Sec. Ref. 209~~

~~Serial No. 106~~
Hole No. 7 (Continued)
Collar Elevation: 960.95'
Depth of Hole: 90.6' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 2/19/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
45	50	Dark buff dolomite, gray-brown & tan chert 85-15, limonite 5 marcasite ½	
50	55	Dark buff dolomite, gray-brown chert 92-8, limonite 10, marcasite ½	
55	60	Dark buff dolomite, brown cave clay, gray-brown chert 60-35-5, limonite-speckled dolomite & limonite 30, marcasite 7/10	
60	65	Dark buff dolomite, gray dolomite 50-50, chert ravellings 3, limonite 5, marcasite 2	GRAY - 60 ?
65	67½	Gray dolomite, buff dolomite & chert ravellings, gray clay 60-20-20, marcasite 25	
67½	70	Brown gray dolomite, dark buff dolomite & chert ravellings 90-10, gray clay 5, marcasite & limonite 20	
70	72½	Brown gray dolomite, dark buff dolomite & chert ravellings 60-40, gray clay 1, marcasite 45	
72½	75	Gray marcasite-speckled dolomite & gray clay, buff dolomite & chert ravellings 90-10, marcasite 30	BLUE - 72½
75	77½	Brown dolomite, buff dolomite ravellings 50-50, few specks gray dark-speckled dolomite, marcasite 35, few specks galena	OILROCK - 75 ?
77½	80	Gray-green clay, few cuttings brown dolomite, buff dolomite & chert ravellings 20, few specks phosphate, marcasite 5, few coarse cuttings galena	CLAY - 78 ?
80	82½	Gray-green clay, dark buff dolomitic ravellings 25, gray-brown dolomite 5, marcasite 2, few coarse cuttings galena	
82½	85	Brown dolomite, gray-green clay, dark buff dolomitic ravellings 40-30-30, marcasite 40, few specks galena	GLASS - 83 ?
85	87½	Brown dolomite, dark buff dolomite & chert ravellings 60-40, marcasite 80	
87½	90	Gray dolomitic limestone, considerable ravellings from overlying beds, marcasite 20	McGREGOR - 87½

Very soft formations
Assays for iron

Water table: 29½'

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 119~~
Hole No. 8
Collar Elevation: 1004.18'
Depth of Hole: 128.0' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 4/6/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	22	Dark ochre clay & chert	
22	30	Buff dolomite, gray chert 90-10, ochre clay sloughing in, limonite 2/10, few specks marcasite	
30	35	Buff dolomite, gray chert 93-7, ochre clay sloughing in, limonite 1/10	
35	40	Buff dolomite, gray chert 96-4, ochre clay sloughing in, trace limonite	
40	45	Buff dolomite, gray chert 97-3, ochre clay sloughing in, trace limonite	
45	50	Light buff dolomite, few specks light brown chert, dark limonite-stained dolomite 5	
50	55	Light buff dolomite, trace gray-brown chert, trace limonite	
55	60	Pale buff dolomite, gray chert 99-1, few specks limonite	
60	65	Pale buff dolomite, gray-brown chert 95-5	
65	70	Coarse cuttings: Pale buff dolomite, gray chert 70-30, limonite ½	
70	75	Coarse cuttings: Pale buff dolomite, gray chert 95-5, limonite 4/10	
75	80	Pale buff dolomite, tan & gray-brown chert 91-9, limonite 3/10	
80	85	Pale gray-brown dolomite, tan & gray-brown chert 98-2, some clay sloughing in, limonite 1/10	
85	90	Brown-buff dolomite, gray dolomite 60-40, limonite 1/10	GRAY - 88
90	92½	Gray dolomite, buff dolomite & gray chert ravellings 25, trace limonite & marcasite	
92½	95	Gray dolomite, mostly buff dolomitic ravellings & some chert ravellings, trace limonite & marcasite	
95	97½	Gray dark-speckled dolomite, buff dolomitic ravellings 25, trace limonite & marcasite	BLUE - 95
97½	100	Gray dark-speckled dolomite, buff dolomitic ravellings 15, trace limonite & marcasite	
100	102½	Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10, trace limonite	
102½	105	Dark gray dark-speckled dolomite, buff dolomitic ravellings 2, trace marcasite	
105	107½	Brown dolomitic limestone, gray dark-speckled dolomite 60-10, marcasite 2/10	OIL - 105.2
107½	110	Brown dolomitic limestone, trace calcite, marcasite 1/10	
110	115	Brown dolomitic limestone, few fossils, marcasite & limonite 1/10, few specks galena	
115	117½	Brown dolomitic limestone & brown-gray dark-speckled fossiliferous dolomitic limestone, trace marcasite	
117½	120	Gray dark-speckled dolomitic limestone, light green clay 80-20, Few specks marcasite	CLAYBED - 119.5
120	122½	Coarse cuttings: Brown dolomite, trace calcite, marcasite 1/10 (1½' of Claybed in this cut per driller)	GLASS - 121½
122½	125	Coarse cuttings: Brown dolomite, few specks calcite, marcasite 1/10	
125	127½	Dark brown dolomite, gray dolomitic limestone (coarse cuttings) 80-20, chocolate brown shale 1, marcasite 8	McGREGOR - 127.0

Driller's remarks:
Loose ground at 65-73
Hole caving from "Drab" while cutting the "GRAY" & "BLUE"

Water table: 63'

Lafayette County
~~Sec. Ref. 109~~

~~Serial No. 120~~
Hole No. 9
Collar Elevation: 994.25'
Depth of Hole: 117.7' (Measurement by steel tape)
Location: Fred W. Wilkinson

Date completed: 4/7/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Dark buffish-brown clay
10	15	Dark buff clay, few coarse cuttings of gray-brown chert
15	20	Buff clay, buff dolomite, gray-brown chert 60-35-5
20	30	Coarse cuttings: Buff dolomite, gray-brown chert 97-3
30	40	Buff dolomite, gray-brown chert 95-5
40	50	Buff dolomite, gray-brown chert 96-4
50	60	Dark buff dolomite, brown & light brown chert 82-18
60	65	Dark buff dolomite, brown & light brown chert 93-7
65	70	Dark buff dolomite, light brown chert 99-1
70	75	Buff dolomite, gray dolomite 60-40 GRAY - 73
75	77½	Gray dolomite, buff dolomite 95-5, a speck marcasite
77½	80	Brown-gray dolomite, few specks marcasite
80	85	Brown-gray dolomite, (some buff dolomite & chert ravellings) marcasite 1/10
85	87½	Gray dark-speckled dolomite, brown gray dolomite 90-10, trace green shale, trace marcasite BLUE - 85.3
87½	92½	Gray dark-speckled dolomite (some ravellings), trace marcasite
92½	95	Brown dolomitic limestone, gray dark-speckled dolomite 90-10, few specks marcasite OILROCK - 92.8
95	97½	Light brown dolomitic limestone, dark brown shale 99-1, trace calcite, marcasite 1/10
97½	100	Brown dolomitic limestone, chocolate brown shale 95-5, marcasite 1/10, few specks blende
100	102½	Light brown limestone, dark brown shaly limestone 95-5, trace marcasite
102½	105	Brown limestone, dark brown shaly limestone 90-10, trace marcasite
105	107½	Gray dark-speckled dolomitic limestone, green clay & shale 3, thin trace marcasite
107½	110	Brown-gray fossiliferous limestone, gray clay 80-20, marcasite 1/10 CLAYBED - 107.4'
110	112½	Brown dolomitic limestone, trace chocolate brown shale, trace marcasite GLASS - 110
112½	115	Brown dolomitic limestone, calcite 3, marcasite 3/10, few specks galena McGREGOR - 117.3
115	117½	Brown dolomitic limestone, gray dolomite limestone 90-10 chocolate brown shale 2, trace calcite, marcasite 1/10

Water table: 57'

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 121~~
Hole No. 10
Collar Elevation: 963.46'
Depth of Hole:
Location: Fred W. Wilkinson

Date completed: 4/18/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	
0	5	Soil
5	10	Buff dolomite, gray-brown chert, dark buff clay 80-15-5, trace limonite
10	15	Coarse cuttings: Dark buff dolomite, gray-brown chert 82-18, trace limonite
15	20	Dark buff dolomite, light gray-brown chert, dark buff clay 70-15-15, trace limonite
20	30	Coarse cuttings: Dark buff dolomite, gray-brown chert 80-20
30	35	Coarse cuttings: Dark buff dolomite, gray-brown chert 85-15
35	40	Coarse cuttings: Dark buff dolomite, buff clay, gray-brown chert 80-18-2
40	45	Coarse cuttings: Dark buff dolomite, gray-brown chert 99-1, a little dark buff clay
45	50	Medium cuttings: Dark buff dolomite, gray-brown chert 97-3, trace dark buff clay, trace gray clay
50	55	Coarse cuttings & few extra coarse cuttings: Dark buff dolomite, buff clay 70-30, dark gray-brown clay 2
55	60	Buff clay & dark brown clay, buff dolomite 97-3 GRAY - 53?
60	65	Buff clay, few coarse cuttings, buff dolomite
65	67½	Buff clay & brown clay, buff dolomite 50-50, few extra coarse cuttings oxidized "Gray" dolomite with coating of green shale on one side
67½	70	Dark buff dolomite, buff clay 60-40, few coarse cuttings gray dark-speckled dolomite BLUE - 67½(?)
70	72½	Buff clay & gray-brown clay, dark buff dolomite 60-40, marcasite ½, few specks blende CHERROCK- 72½?
72½	75	Brown clay & few coarse cuttings brown dolomite, marcasite 1/10, few rather coarse crystals of blende
75	77½	Coarse cuttings: Brown dolomitic limestone (punky), brown & gray-brown clay 80-20, a speck green clay, marcasite 7/10, some fossils, few specks blende
77½	80	Brown shaly limestone (coarse chips), green clay 80-20, marcasite 1/10, few phosphate nodules, few specks blende CLAYBED - 79½ ?
80	82½	Brown clay, brown dolomitic limestone 50-50, few coarse cuttings gray dolomite, few fossils, some brown shale, marcasite 3/10, few specks blende
82½	85	Extra coarse cuttings: Buff dolomitic ravellings (couldn't get bailer to bottom--Hole collapsed.) GLASSROCK - 81?

McGREGOR: Not certain that formation was cut.

Impossible to measure the depth.
A soft muddy hole: None of the "Tops" are reliable.

Water table: 35'

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 103~~
Hole No. 1 (Water well)
Collar Elevation: 972.97'
Depth of Hole: 115.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 9/23/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	10	Dark brown clay	
10	20	Dark ochre clay	
20	25	Dark buff clay, brown chert 5, trace buff dolomite	
25	30	Buff dolomite, brown & tan chert 92-8, trace limonite	
30	40	Buff dolomite, brown & tan chert 96-4, trace limonite	
40	50	Buff dolomite, gray chert 91-9, galena 1/10, trace limonite	
50	60	Buff dolomite, tan chert 93-7, limonite 4/10, few specks galena	
60	65	Buff dolomite, tan chert 80-20, limonite 5/10	
65	70	Buff dolomite, gray-brown chert 93-7, limonite 2/10	
70	75	Buff dolomite, trace chert, limonite 1/10	
75	80	Gray-buff dolomite, trace calcite, trace limonite	GRAY - 75
80	85	Gray-buff dolomite, trace calcite, trace limonite	
85	90	Gray buff dolomite, gray dark-speckled dolomite 60-40, trace limonite & marcasite	
90	92½	Buff dolomite, limonite stained clay, gray dark-speckled dolomite 95-3-2, specks marcasite	BLUE - 90
92½	95	Buff dolomite, gray dark-speckled dolomite, limonite-stained clay 85-10-5, trace marcasite	
95	97½	Brown dolomitic limestone, dark brown shaly limestone 60-40, marcasite 4	OIL - 95
97½	100	Brown fossiliferous dolomitic limestone, brown shale 95-5, marcasite 3, blende 1	
100	102½	Gray clay, brown dolomite, limestone 80-20, marcasite 2, blende 8/10	CLAY - 100.5
102½	105	Brown dolomitic limestone, dark brown shaly limestone 50-50, marcasite 7, blende 1½, trace galena	GLASS - 102.5
105	107½	Dark brown shaly limestone, marcasite 1, few coarse pieces blende & galena (extra coarse)	
107½	110	Coarse cuttings: Dark brown shaly limestone, light gray punky dolomitic limestone 60-40, marcasite 5/10, trace blende & galena	McGREGOR - 109
110	112½	Coarse cuttings: light gray punky dolomitic limestone, dark brown shaly limestone 80-20, marcasite 2/10, trace blende & galena	
112½	115	Coarse cuttings: Light gray punky dolomitic limestone, dark brown shaly limestone 95-5, marcasite 2/10, blende 1/10, trace galena	

Water well. Structure drilling.

Water table: 52'

Depth From	Depth To	Assays ZnS	FeS₂	PbS
97½	100	1.85	6.00	nil.
100	102½	3.50	7.30	nil.
102½	105	1.40	12.70	nil.

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 107~~
Hole No. 2
Collar Elevation: 986.95'
Depth of Hole: 111.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown & dark ochre clay
5	10	Ochre clay
10	15	Buff dolomite, gray-brown chert 93-7, trace limonite
15	20	Buff dolomite, gray-brown chert 94-6, trace limonite
20	30	Light buff dolomite, pale brown chert 98-2, trace limonite
30	40	Buff dolomite & dark buff limonite-speckled dolomite 90-10, trace pale brown chert, thin trace limonite
40	50	Brown-buff dolomite, dark buff limonite-speckled dolomite, brown-buff chert 90-8-2
50	55	Buff dolomite, dark buff chert & brown chert 92-8, (coarse cuttings) few specks galena
55	60	Coarse cuttings: Buff dolomite, brown chert & dark buff chert 90-10, a few cuttings resemble zinc carbonate
60	65	Buff dolomite, buffish-brown chert, ochre clay 90-7-3, dark orange granular material of higher specific gravity than dolomite 2%
65	70	Buff dolomite, dark buff dolomite, brown chert 80-15-5, trace calcite, blende 1, dark orange granular material 3
70	75	Buff dolomite, grey dolomite 80-20, trace brown chert, blende 2
75	77½	Gray dolomite, buff dolomite, 90-10, ochre clay 1, blende 1, marcasite 2/10
77½	80	Gray dolomite, buff dolomite 60-40, blende 1, marcasite 1/10
80	82½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 20, gray clay 1, marcasite 1, blende 1
82½	85	Gray dark-speckled dolomite, buff dolomitic ravellings 95-5, marcasite 1, blende 1
85	87½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 97-3, marcasite 2, blende 7/10
87½	90	Gray dark-speckled dolomite, buff dolomite & chert ravellings 90-10, marcasite 2, blende 3/10
90	92½	Gray marcasite-speckled dolomite, brown dolomite 90-10, marcasite 7, blende 4
92½	95	Brown fossiliferous dolomitic limestone (marcasite-speckled) marcasite 5, blende 2, few specks galena
95	97½	Coarse cuttings: Brown dolomitic limestone, trace green clay, marcasite 2/10, few specks blende & galena
97½	100	Brown dolomitic limestone, green clay 80-20, dark gray fossiliferous limestone 10, marcasite 4, galena 2/10, blende 8/10 — CLAY - 97½
100	102½	Brown dolomitic limestone, marcasite 2, blende 7/10, galena 3/10 — GLASS - 98
102½	105	Brown dolomitic limestone, marcasite ½, blende 1/10, a speck galena
105	107½	Gray dark-speckled dolomitic limestone, brown dolomitic limestone 97-3, marcasite 3/10, trace blende — McGREGOR - 105
107½	110	Gray dark-speckled dolomitic limestone, brown dolomitic limestone ravellings 90-10, marcasite 2/10, trace blende

Water table: 54'

Continued

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Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 107~~
Hole No. 2 (Continued)
Collar Elevation: 986.95'
Depth of Hole: 111.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 2/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Assays ZnS	FeS_2	PbS	$ZnCO_3$
55	60	1.54	5.00	Nil.	12.85
60	65	0.97	4.10	Nil.	7.00
65	70	2.04	3.70	Nil.	8.63
70	75	2.80	3.50	Nil.	4.80
75	77½	1.47	2.40	Nil.	2.40
77½	80	1.40	2.60	Nil.	2.11
80	82½	3.81	3.70	Nil.	0.77
82½	85	2.74	3.90	Nil.	0.58
85	87½	1.95	3.20	Nil.	
87½	90	1.25	3.20	Nil.	
90	92½	7.55	15.30	Nil.	
92½	95	3.40	14.60	Nil.	
95	97½	1.20	5.40	Nil.	
97½	100	1.30	5.80	Nil.	
100	102½	1.80	9.50	Nil.	
102½	105	2.05	7.10	Nil.	

Lafayette County
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~~Serial No. 109~~
Hole No. 3
Collar Elevation:
Depth of Hole:
Location: Fred W. & J. Frank Wilkinson

Date completed:
Drilled by: Eagle-Picher, DMA
Logged by:
Type of Drilling: Churn

Depth From	Depth To	Lithology
		Soil & drab

Hit an opening at 25 feet. Abandoned hole.

Lafayette County
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Serial No. 110
Hole No. 4
Collar Elevation: 979.66'
Depth of Hole: 106.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/9/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	4	Black soil
4	10	Buff dolomite, gray-brown chert 85-15
10	15	Buff dolomite, gray-brown chert 90-10
15	20	Coarse cuttings: Buff dolomite, gray-brown chert 96-4, limonite imbedded in dolomite 5
20	25	Coarse cuttings: Buff dolomite, gray-brown chert 99-1, limonite imbedded in dolomite 3
25	30	Buff dolomite, gray-brown chert 97-3, limonite 2
30	40	Buff dolomite, gray-brown chert 99-1
40	50	Buff dolomite, gray-brown chert & dark brown chert 82-18, a speck galena
50	55	Buff dolomite, gray-brown chert 93-7, trace limonite, a speck galena GRAY - 58
55	60	Buff dolomite, gray dolomite (coarse cuttings) 60-40, trace gray-brown chert, few specks limonite & galena
60	62½	Gray dolomite, buff dolomitic ravellings 25, few specks limonite, marcasite & galena
62½	65	Gray dolomite, buff dolomitic ravellings 65, trace limonite, few specks marcasite & galena
65	67½	Buffish-brown dolomite, gray dolomite 90-10, few coarse cuttings of coarse grained dolomite & limonite & possibly Smithsonite, thin trace limonite, a speck galena
67½	70	Gray dolomite, buff dolomitic ravellings 30, few specks limonite galena & marcasite
70	72½	Gray dark-speckled dolomite, buff ravellings 5, few specks marcasite & galena BLUE - 70
72½	75	Dark gray dark-speckled dolomite, buff ravellings 3, few specks marcasite & galena
75	77½	Dark gray dark-speckled dolomite, buff ravellings 5, few specks marcasite & galena OILROCK - 77.7

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 110~~
Hole No. 4 (Continued)
Collar Elevation: 979.66'
Depth of Hole: 106.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/9/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
77½	80	Brown dolomitic limestone, dark gray dark-speckled dolomite 90-10, few specks marcasite & galena
80	82½	Brown dolomitic limestone, trace calcite, trace marcasite, few specks blende & galena
82½	85	Brown fossiliferous dolomitic limestone, dark brown shale 96-4, thin trace marcasite & galena
85	87½	Light brown dolomitic limestone, dark brown shaly limestone 94-6, trace marcasite, few specks galena
87½	90	Brown dolomitic limestone, dark brown shaly limestone 95-5, trace marcasite, a speck blende & galena
90	92½	Gray dark-speckled fossiliferous dolomitic limestone & gray clay 90-10, trace green shale, trace marcasite
92½	95	Light brown sugary dolomitic limestone, gray dark-speckled fossiliferous dolomitic limestone 80-20, trace marcasite
95	97½	Brown & dark brown sugary dolomitic limestone, trace calcite, trace marcasite
97½	100	Brown sugary dolomitic limestone, chocolate brown shale 96-4, trace marcasite
100	102½	Gray dolomitic limestone, brown dolomitic limestone & chocolate brown shale 95-5, marcasite 1/10, specks blende
102½	105	Gray dolomitic limestone, thin trace marcasite

Water table: 51'
Driller's remarks: Cracky ground at 22 to 24. Loose ground 45 to 55. Caving some.

Lafayette County
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Serial No. 111
Hole No. 5
Collar Elevation: 985.17'
Depth of Hole: 110.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Dark ochre clay
5	10	Coarse cutings: Buff dolomite, gray-brown chert 50-50, trace limonite
10	15	Buff dolomite, gray-brown chert 80-20, trace limonite
15	20	Buff dolomite, gray-brown chert 90-10, trace limonite
20	30	Buff dolomite, gray-brown chert & dark buff chert 93-7, thin trace limonite
30	40	Buff dolomite, gray-brown chert 99-1, a speck galena, thin trace limonite

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 111~~
Hole No. 5 (Continued)
Collar Elevation: 985.17'
Depth of Hole: 110.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/10/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
40	50	Brown-buff dolomite, gray-brown chert 96-4, thin trace limonite
50	55	Buff dolomite, gray-brown chert & dark buff chert 82-18, trace limonite, specks galena
55	60	Brown-buff dolomite, gray-brown chert & brown chert 95-5, trace dark buff chert, trace limonite, a speck galena
60	65	Gray dolomite, brown-buff dolomite 60-40, marcasite 2, blende 1, specks galena GRAY - 62
65	67½	Gray dolomite, buff ravellings 5, marcasite 1, blende 7/10
67½	70	Gray dolomite, buff ravellings 5, marcasite ½, blende 3/10
70	72½	Gray dolomite, buff ravellings 5, marcasite 3/10, blende 1/10
72½	75	Gray dolomite, buff ravellings 2, marcasite 3/10, blende 2/10
75	77½	Gray dolomite, buff ravellings3, marcasite 4/10, blende 1/10 BLUE - 77½
77½	80	Gray dark-speckled dolomite, buff ravellings 2, marcasite 2/10, trace blende
80	82½	Gray dark-speckled dolomite, buff ravellings 3, marcasite 2/10, trace blende
82½	85	Gray dark-speckled dolomite, buff ravellings 2, marcasite 1/10, trace blende
85	87½	Gray dark-speckled dolomite, brown dolomitic limestone 50-50 trace marcasite, few specks blende OIL - 86.2
87½	90	Pale brown dolomitic limestone, marcasite 1/10, a speck blende
90	95	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 95-5, marcasite 1/10, specks blende
95	97½	Gray-brown limestone, dark brown dolomitic limestone 95-5, marcasite 1/10, few specks blende & galena
97½	100	Gray dark-speckled dolomitic limestone (coarse cuttings), & gray-brown limestone 80-20, trace marcasite, few specks blende & galena CLAY - 100.0
100	102½	Coarse cuttings: Gray-brown limestone, dark gray fossiliferous limestone 80-20, trace marcasite GLASS - 100.5
102½	105	Coarse cuttings: Brown dolomitic limestone, trace calcite, marcasite 2/10, few specks blende
105	107½	Dark brown dolomite (sugary), calcite 1, chocolate brown shale 1, marcaste 1/10, few specks galena & blende
107½	110	Gray dolomitic limestone, dark brown dolomite 90-10, marcasite 1/10, few specks galena & blende McGREGOR - 107.8

Water table: 53'

Depth From	Depth To	Assays ZnS	FeS2	PbS
60	65	2.10	3.70	Nil.
65	67½	1.85	3.70	Nil.

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~~Serial No. 112~~
Hole No. 6
Collar Elevation: 994.96'
Depth of Hole: 117.5' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Brown-buff clay, buff dolomite 95-5
10	15	Coarse cuttings: Buff dolomite, gray-brown & buff chert 90-10, few specks limonite
15	20	Coarse cuttings: Dark buff dolomite, gray-brown & buff chert 82-18, trace limonite, few specks galena
20	25	Coarse cuttings: Dark buff dolomite, gray-brown 93-7, few specks limonite
25	30	Coarse cuttings: Dark buff dolomite, gray-brown chert 95-5 few specks limonite
30	40	Coarse cuttings: Dark buff dolomite, gray-brown chert 96-4 few specks limonite
40	50	Coarse cuttings: Dark buff dolomite, gray-brown chert 94-6 few specks limonite
50	60	Coarse cuttings: Dark buff dolomite, gray-brown chert 99-1 few specks limonite
60	65	Coarse cuttings: Buff dolomite, gray-brown & tan chert 92-8 few specks limonite & marcasite
65	70	Coarse cuttings: Buff dolomite, brown & tan chert 93-7, few specks limonite & marcasite
70	75	Buff dolomite, gray-brown chert 92-8, a speck marcasite
75	80	Brown-buff dolomite, gray dolomite 90-10, a speck marcasite GRAY - 79.5
80	82½	Gray dolomite, buff dolomite, 70-30, few specks marcasite
82½	85	Gray dolomite, buff dolomite 96-4, trace marcasite
85	87½	Brown-gray dolomite, marcasite 1/10
87½	90	Brown-gray dolomite, marcasite 3/10
90	92½	Gray dark-speckled dolomite, marcasite 4/10 BLUE - 90.0
92½	95	Gray dark-speckled dolomite, marcasite 5/10
95	97½	Gray dark-speckled dolomite, marcasite 5
97½	100	Gray dark-speckled dolomite & gray clay, brown dolomitic limestone 97-3, marcasite 3
100	102½	Brown fossiliferous dolomitic limestone, gray dark-speckled dolomite & gray clay (ravelling), marcasite 1, few coarse pieces of blende & galena OILROCK - 100.0
102½	105	Brown fossiliferous dolomitic limestone, brown clay 90-10, marcasite 1, galena (coarse) 2, few coarse pieces blende, some "Blue" ravellings CLAYBED - 105.3
105	107½	Gray clay, brown dolomitic limestone 90-10, few phosphate nodules, galena 2/10, marcasite 2/10, few specks blende
107½	110	Bentonite, trace brown dolomite, few specks marcasite & galena
110	112½	Coarse cuttings: Brown dolomitic limestone, trace calcite marcasite 1, galena 2/10, specks blende
112½	115	Gray dolomitic limestone (coarse cuttings), brown dolomitic limestone 70-30, marcasite 4/10, trace galena, few specks blende McGREGOR - 113.3

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 112~~
Hole No. 6 (Continued)
Collar Elevation: 994.96'
Depth of Hole: 117.5' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/13/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
115	117½	Coarse cuttings: gray dolomitic limestone, marcasite 2/10, few specks blende & galena

Water table: 75'

Depth From	Depth To	Assays ZnS	FeS2	PbS
102½	105	1.50	7.30	4.84

Lafayette County
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Serial No. 113
Hole No. 7
Collar Elevation: 999.82'
Depth of Hole: 124.7' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Buffish brown clay
10	15	Brown-buff clay
15	20	Dark buff clay, few specks gray-brown chert
20	25	Dark buff clay, buff dolomite, gray-brown chert 80-18-2, trace limonite
25	30	Dark buff clay, buff dolomite, gray-brown chert 80-19-1, trace limonite
30	35	Dark buff dolomite, gray-brown chert 90-10, buff clay 1, trace limonite, a speck galena
35	40	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, few specks limonite
40	50	Rather coarse: Buff dolomite, gray-brown chert 92-8, few specks limonite
50	60	Rather coarse: Buff dolomite, gray-brown chert & tan chert 82-18, trace limonite
60	70	Rather coarse: Buff dolomite, tan, gray-brown & buff chert 94-6, trace limonite
70	75	Buff dolomite, tan & brown chert 91-9, few specks limonite
75	80	Buff dolomite, tan chert 90-10, few specks limonite
80	85	Buff dolomite, tan chert 98-2, trace gray-brown cave filling & rusty clay, trace limonite

Continued

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 113~~
Hole No. 7 (Continued)
Collar Elevation: 999.82'
Depth of Hole: 124.7' (Measurement by steel tape)

Date completed: 4/14/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
85	90	Coarse cuttings: Dark buff dolomite, tan & gray-brown chert 95-5, trace brown clay, trace limonite
90	95	Buff & dark buff dolomite, tan chert 96-4, trace limonite
95	100	Dark buff dolomite (coarse) & few extra coarse chips gray dolomite, gray-brown chert 1, trace limonite BLUE - 100?
100	102½	Dark buff dolomite, gray dark-speckled dolomite 80-20, trace gray clay, trace limonite & marcasite
102½	105	Dark buff dolomitic ravellings, gray dark-speckled dolomite 50-50, marcasite ½
105	107½	Gray clay & gray dark-speckled dolomite, dark buff dolomitic ravellings 90-10, marcasite 4/10 OILROCK - 108?
107½	110	Coarse cuttings: Brown dolomitic limestone, gray dark-speckled dolomite 80-20, buff dolomite & chert ravellings 80%, marcasite 4/10
110	112½	Brown fossiliferous dolomitic limestone, ravellings from overlying beds 70%, marcasite 3/10, few specks blende
112½	115	Green clay, some ravellings from overlying beds CLAY - 112½ (?)
115	117½	Bentonite, (ravellings from DRAB & BLUE 40%), few phosphate nodules, marcasite 2/10, few specks blende GLASS - 117½ (?)
117½	120	Dark brown dolomitic limestone, buff ravellings 20, marcasite 2/10, few specks blende
120	122½	Buff dolomitic ravellings 90, gray dolomitic limestone 10, some coarse chips limonite, marcasite 1/10, few specks blende McGREGOR - 121. (?)
122½	125	Buff dolomitic ravellings 60, gray dolomitic limestone 40, marcasite 3/10, specks blende

Water table: 68'

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 114~~
Hole No. 8
Collar Elevation: 967.83'
Depth of Hole: 89.7' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/15/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Coarse cuttings: buff dolomite-tan chert gray brown chert 92-8
10	20	Buff dolomite-tan chert 94-6, few specks galena
20	25	Buff dolomite-tan chert 97-3, trace limonite, few specks galena
25	30	Buff dolomite-gray brown chert 96-4, speck galena
30	40	Buff dolomite-gray brown chert 92-8, trace galena
40	45	Buff dolomite-brown chert 97-3, speck galena
45	50	Buff dolomite-tan & brown chert 95-5, speck galena GRAY 50
50	55	Gray buff dolomite-trace brown & tan chert-trace limonite, speck galena
55	57½	Gray buff dolomite-trace limonite, speck galena
57½	60	Brownish gray buff dolomite-trace tan chert ravellings
60	62½	Brownish gray buff dolomite - gray dark speckled dolomite 95-5 a speck marcasite BLUE 62½
62½	65	Gray dark speckled dolomite-trace buff ravellings-marcasite 7/10
65	67½	Gray dark speckled dolomite-buff ravellings 5, marcasite 6/10, speck blende
67½	70	Gray dark speckled dolomite-buff ravellings 3, gray clay 2, marcasite 4/10, speck blende OILROCK 70½
70	72½	Brown dolomitic limestone-gray dark speckled dolomite 80-20, marcasite 1, blende 1%
72½	75	Brown fossiliferous dolomitic limestone-brown clay 90-10, brown shale 5, marcasite 1, blende 3% (amber & strawberry) CLAYBED 74.8
75	77½	Gray clay-coarse crystals of blende 10% (black jack), marcasite 1
77½	80	Coarse cuttings, brown mottled chert-gray clay-brown dolomite 30-40-30, marcasite 1, coarse crystals black blende 1%
80	82½	Dark brown dolomite-trace calcite, marcasite 1, amber blende ½
82½	85	Dark brown dolomite, calcite 8, marcasite 10, blende 1% GLASS 78?
85-	87½	Gray dolomitic limestone-marcasite 3, blende ½ McGREGOR 85.0
87½	90	Gray dolomitic limestone-marcasite 2, blende ½

Water table: 41'

Depth From	Depth To	Assays ZnS	FeS2	PbS
70	72½	2.05	5.20	Nil.
72½	75	10.15	6.50	Nil.
75	77½	18.55	6.50	Nil.
77½	80	4.70	6.70	Nil.
80	82½	2.10	6.00	Nil.
82½	85	1.35	14.20	Nil.

277a

Lafayette County
~~Sec. Ref.~~ 209

~~Serial No. 115~~
Hole No. 9
Collar Elevation: 970.26'
Depth of Hole: 92.1' (Measurement by stick)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Coarse cuttings: Buff dolomite, gray-brown chert 80-20, trace limonite, few specks marcasite
10	15	Coarse cuttings: Buff dolomite, tan & gray-brown chert 88-12, few specks limonite & marcasite
15	20	Buff dolomite, tan & gray-brown chert 92-8, thin trace limonite
20	30	Buff dolomite, tan chert 97-3, thin trace limonite
30	35	Dark buff dolomite, tan & gray-brown chert 93-7, limonite 1/10
35	40	Dark buff dolomite, gray-brown chert 80-20, limonite 1/10
40	45	Dark buff dolomite, gray-brown chert 95-5, limonite 1/10
45	50	Dark buff dolomite, gray-brown chert 99-1, limonite 1/10, coarse galena 1/10 GRAY - 50
50	55	Gray-buff dolomite, gray-brown chert 99-1, limonite 1/10, galena 1/10
55	60	Gray-buff dolomite, few specks chert, trace limonite, few specks galena
60	62½	Gray-buff dolomite, few specks gray dark-speckled dolomite, limonite 1, few specks marcasite & galena BLUE - 62½
62½	65	Gray dark-speckled dolomite, buff ravellings 5, limonite 1/10, marcasite 1/10, specks galena
65	67½	Gray-buff dolomite, gray dark-speckled dolomite 90-10, limonite 1/10, marcasite 1/10, specks galena
67½	70	Gray-buff dolomite, limonite 2, marcasite 1/10, trace galena
70	72½	Brown dolomitic limestone, gray dark-speckled dolomite 60-40 little buff dolomitic ravellings, limonite ½, marcasite 1/10 trace galena OIL - 71.0
72½	75	Brown dolomitic limestone, considerable buff dolomitic ravellings, ochre clay 4, limonite 2/10, few specks marcasite & galena
75	77½	Brown fossiliferous dolomitic limestone, ochre clay 5, galena 7/10, trace marcasite
77½	80	Brown fossiliferous dolomitic limestone, brown shale 99-1, galena 5/10, trace marcasite, specks blende
80	82½	Brown-gray dark-speckled dolomitic limestone, green clay 90-10, marcasite 1, blende 2, galena 3/10, few phosphate nodules CLAYBED 82.2
82½	85	Brown dolomitic limestone, trace green clay, marcasite ½, blende 2/10, galena 1/10 GLASS - 83
85	87½	Ravellings of buff dolomite & ochre clay, brown dolomitic limestone 98-2, few specks blende & galena (strong flow water)
87½	90	Brown dolomitic limestone, buff dolomitic ravellings 10, little ochre clay, marcasite 2/10, trace galena
90	92	Dark brown dolomite, few specks gray dolomitic limestone, marcasite 2/10, few specks galena & blende McGREGOR - 92(?)

Water table: ?
Hole caving badly while drilling "Glassrock".
McGregor top is uncertain

Assays

Depth From	Depth To	ZnS	FeS_2	PbS
80	82½	3.85	10.70	2.42

278a

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 116~~
Hole No. 10
Collar Elevation: 964.68'
Depth of Hole: 85.4' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/17/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	8	Soil
8	15	Coarse cuttings: Buff dolomite, gray-brown, tan & buff chert 80-20, trace galena
15	20	Coarse cuttings: Buff dolomite, tan chert 93-7, a few coarse chips galena
20	25	Buff dolomite, tan & gray-brown chert 94-6, few specks galena
25	30	Dark buff dolomite, tan & gray-brown chert 90-10, a speck galena
30	35	Dark buff dolomite, tan chert 83-17
35	40	Dark buff dolomite (coarse), tan & gray-brown chert 92-8
40	45	Dark buff dolomite, tan & gray-brown chert 97-3
45	50	Buff (few coarse cuttings), tan chert 99-1, few specks limonite
50	55	Buff dolomite, trace tan chert, few specks limonite
55	60	Buff dolomite, gray dolomite 70-30, few specks limonite & marcasite
60	62½	Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10 BLUE - 60
62½	65	Fine cuttings: Gray dark-speckled dolomite, buff dolomitic ravellings 40, trace limonite-stained clay, marcasite 3/10
65	67½	Medium cuttings: Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10
67½	70	Light brown fossiliferous dolomitic limestone, gray clay 95-5, marcasite ½, blende 6/10 OIL - 67.6
70	72½	Light brown fossiliferous dolomitic limestone, brown clay 92-8, marcasite 4/10, blende 3/10, galena 1/10
72½	75	Green clay CLAY - 72.5
75	77½	Coarse cuttings: Dark brown dolomite, buff dolomitic ravellings 7, marcasite 2/10, blende 2/10, few specks galena GALENA - 75.0
77½	80	Dark brown dolomite, chocolate brown shale 98-2, buff dolomitic ravellings 8, brown-gray limestone 3, marcasite 1, blende 3/10, few specks galena
80	82½	Gray dolomitic limestone, brown limestone 85-15, marcasite ½, blende 2/10, few specks galena
82½	85	Brown-gray dolomitic limestone, marcasite 2/10, blende 1/10, few specks galena McGREGOR - 80.0

Water table: 34'

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 117~~
Hole No. 11
Collar Elevation: 973.23'
Depth of Hole: 105.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/21/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Dark ochre clay
5	10	Ochre clay, gray-brown chert 98-2
10	15	Ochre clay, buff dolomite, gray-brown chert 90-8-2, trace limonite
15	20	Buff dolomite, ochre clay, gray-brown chert 80-12-8, trace limonite
20	25	Buff dolomite, gray-brown chert 98-2, limonite 5
25	35	Buff dolomite, light gray-brown chert 95-5, limonite 1
35	45	Buff dolomite, light gray-brown chert 92-8, limonite 1/10
45	55	Buff dolomite, brown & gray-brown chert 80-20, limonite 2/10, a speck galena
55	60	Gray dolomite, buff dolomite 90-10, trace chert, limonite & marcasite ½, trace galena GRAY - 55.5
60	62½	Coarse cuttings: gray dolomite, marcasite & limonite 7/10, few specks galena
62½	65	Coarse cuttings: gray dolomite, marcasite & limonite ½, a speck galena
65	67½	Gray dolomite, marcasite & limonite 2/10, a speck galena
67½	70	Gray dolomite, calcite 1, marcasite 2/10, a speck galena
70	72½	Brown-gray dolomite, gray dark-speckled dolomite 80-20, marcasite 2/10, specks blende & galena, calcite ½ BLUE -72
72½	75	Gray dark-speckled dolomite, trace calcite, trace marcasite, specks blende & galena
75	77½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 8, marcasite & limonite 2/10, thin trace galena, few specks blende
77½	80	Gray dark-speckled dolomite, buff dolomite & chert ravellings 5, brown dolomitic limestone 1, limonite & marcasite 1/10, few specks galena OIL - 80.0
80	82½	Brown fossiliferous dolomitic limestone, trace calcite, marcasite & limonite 2/10, few specks galena
82½	85	Brown fossiliferous dolomitic limestone, dark brown shale 98-2, trace calcite, marcasite & limonite 1/10, few speks galena
85	87½	Brown dolomitic limestone, dark brown shaly limestone 94-6, marcasite & limonite 1/10, few specks galena
87½	90	Brown & dark brown dolomitic limestone, marcasite & limonite 1/10, few specks blende & galena
90	92½	Gray dark-speckled fossiliferous dolomitic limestone, brown dolomitic limestone 60-40, marcasite & limonite 1/10 few specks blende & galena CLAY - 92.5
92½	95	Pale brown dolomitic limestone, dark gray fossiliferous limestone, green shale 80-19-1, brown shale 2, trace limonite & marcasite, specks galena & blende GLASS - 93.0
95	97½	Dark brown sugary dolomite, few specks calcite, thin trace marcasite
97½	100	Dark brown sugary dolomite, trace calcite, thin trace marcasite
100	102½	Dark brown dolomitic limestone, gray dolomitic limestone (coarse cuttings) 80-20, chocolate brown shale 1, thin trace marcasite McGREGOR - 102.0
102½	105	Gray dolomitic limestone, thin trace marcasite.

Water table: 50'

2809

Lafayette County
~~Sec. Ref. 099~~

~~Serial No. 118~~
Hole No. 12
Collar Elevation: 962.72'
Depth of Hole: 94.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Dark brown & ochre clay, trace chert
5	10	Dark ochre clay, chert 95-5
10	15	Buff dolomite, gray-brown, brown & dark buff chert 65-35, some dark ochre clay, trace limonite, few specks marcasite
15	20	Buff dolomite, gray-brown chert 60-40, thin trace limonite, a speck marcasite & blende
20	25	Buff dolomite (fine cuttings), dark buff clay 95-5, gray chert 2, limonite 1/10
25	30	Buff dolomite (fine cuttings), dark buff clay 95-5, gray chert 3, limonite 2/10
30	35	Buff dolomite (fine cuttings with a few coarse cuttings), dark brown & gray chert 96-4, few coarse chips limonite, fine limonite 2/10
35	40	Buff dolomite, gray chert 92-8, some dark buff clay, limonite ½ (samples very muddy from 20' to 40')
40	45	Coarse cuttings: Buffish gray-brown dolomite, gray & dark limonite-stained chert 80-20, limonite & marcasite 4/10
45	50	Brown dolomite, gray-brown & dark limonite-stained chert 95-5, trace gray dolomite, limonite & marcasite 1, few specks blende GRAY - 50
50	52½	Gray dolomite, chert ravellings 50, marcasite & limonite 8/10, few specks blende
52½	57½	Gray dolomite, buff dolomite & chert ravellings 60, marcasite & limonite 6/10
57½	60	Gray dolomite, buff dolomite & chert ravellings 85, limonite & marcasite 1
60	62½	Gray dolomite, buff dolomite & chert ravellings 4, marcasite & limonite 3/10 BLUE - 62.5
62½	65	Gray dark-speckled dolomite, buff dolomite & chert ravellings 1, trace calcite, marcasite 2/10, a speck blende
65	67½	Gray dark-speckled dolomite, trace calcite, marcasite ½, few specks blende & galena
67½	70	Gray dark-speckled dolomite, trace calcite, some chert & limonite ravellings, marcasite 2, few specks blende & galena
70	72½	Gray dark-speckled dolomite, brown dolomitic limestone 80-20 marcasite ½, thin trace galena OIL - 72.0
72½	75	Brown dolomitic limestone, few cuttings brown chert, trace calcite, marcasite 6/10, few specks galena
75	80	Brown dolomitic limestone, dark brown shaly limestone 99-1, marcasite 2/10, few specks galena & blende
80	82½	Brown dolomitic limestone, dark brown shaly limestone 96-4, marcasite 1/10, few specks galena & blende
82½	85	Gray dark-speckled dolomitic limestone, dark gray fossiliferous limestone, green clay 70-20-10, marcasite 1/10, a speck blende & galena CLAY - 84.3
85	87½	Gray & brown-gray dark-speckled dolomitic limestone, gray clay 80-20, marcasite 1/10, specks blende
87½	90	Dark brown sugary dolomite, trace chocolate brown shale, marcasite 1/10, specks blende GLASS 87.5

Continued

2819

Lafayette County
~~Sec. Ref. 209~~

~~Serial No. 118~~
Hole No. 12 (Continued)
Collar Elevation: 962.72'
Depth of Hole: 94.0' (Measurement by steel tape)
Location: Fred W. & J. Frank Wilkinson

Date completed: 4/22/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
90	92½	Dark brown sugary dolomite, chocolate brown shale 99-1, Marcasite 1/10, trace galena, specks blende
92½	95	Gray dolomitic limestone, dark brown sugary dolomite 95-5, trace chocolate brown shale, marcasite 1/10, few specks galena

McGREGOR - 92.5

Water table: 37½'

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 146~~
Hole No. 1
Collar Elevation: 929.01'
Depth of Hole: 107.0' (Measurement by steel tape)
Location: Bessie Wiseman

Date completed: 10/2/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	Lithology
0	5	Brown & ochre clay
5	10	Dark buff dolomite, gray-brown chert 80-20 (coarse)
10	15	Buff dolomite, gray-brown, buff & red chert 85-15, specks limonite
15	25	Coarse cuttings: Buff dolomite, tan & brown chert 90-10, trace limonite
25	30	Dark buff dolomite, tan & brown chert 92-8, trace limonite
30	40	Coarse cuttings: Dark buff dolomite, tan chert 93-7, trace limonite & marcasite
40	45	Brown dolomite (some marcasite-speckled), buff dolomite, gray-brown chert 60-30-10, marcasite 5
45	50	Brown dolomite, gray-brown & gray marcasite-speckled chert 75-25, marcasite 8
50	55	Brown dolomite, brown chert 98-2, marcasite 2
55	60	Gray dolomite, marcasite 3 — GRAY - 55
60	65	Gray dolomite, buff dolomite & chert ravellings 4, marcasite 1
65	67½	Gray dolomite, buff dolomite & chert & limonite ravellings 5, marcasite ½
67½	70	Gray dolomite, buff dolomite & chert & limonite ravellings 4, marcasite 4/10
70	72½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 20, marcasite 4/10 — BLUE - 70
72½	75	Gray dark-speckled dolomite, buff dolomite & chert ravellings 92-8, marcasite 5/10
75	77½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 95-5, marcasite 3/10
77½	80	Gray dark-speckled dolomite, brown dolomite 90-10, gray clay 3, marcasite 3/10 — OIL - 79.7
80	82½	Brown dolomitic limestone, marcasite 3/10
82½	85	Brown dolomitic limestone, marcasite 2/10
85	87½	Brown dolomitic limestone, dark brown shaly limestone 90-10, marcasite 3/10, galena 3/10
87½	90	Pale brown dolomitic limestone, dark buff clay 90-10, marcasite ½, few specks galena
90	92½	Gray-brown dolomitic limestone, brown shale 98-2, marcasite 1, few specks blende & galena — CLAY - 90?
92½	95	Gray-brown dolomitic limestone, dark gray fossiliferous limestone, brown shale 95-3-2, marcasite 2, few specks blende & galena (No green clay or shale present)
95	97½	Brown dolomitic limestone, light gray-brown dolomitic limestone 80-20, marcasite 1, thin trace blende — GLASS - 95½
97½	100	Brown dolomite, marcasite 1, few specks blende
100	102½	Brown dolomite, dark brown shale 99-1, brown-gray dolomitic limestone 5, marcasite 8/10
102½	105	Brown dolomite, marcasite 7/10
105	107	Gray dolomitic limestone, trace brown dolomite, marcasite 4/10 — McGREGOR - 105

Water table: 22'

2839

Lafayette County
~~Sec. Ref. 152~~

~~Serial No. 147~~
Hole No. 2
Collar Elevation: 971.95'
Depth of Hole: 137.5' (Measurement by steel tape)
Location: Bessie Wiseman

Date completed: 10/6/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Brown gray clay
10	15	Brown & dark buff clay
15	25	Dark buff clay
25	30	Buff dolomite, gray-brown chert 70-30, trace limonite
30	40	Buff dolomite, gray-brown & tan chert 93-7, thin trace limonite
40	50	Buff dolomite, gray-brown chert 98-2, thin trace limonite
50	60	Buff dolomite, gray-brown chert 90-10, limonite 1/10
60	65	Brown-buff dolomite, gray-brown chert 99-1, trace limonite, specks galena
65	70	Buff dolomite, light brown chert 92-8, few specks galena
70	75	Coarse cuttings: brown-buff dolomite, gray-brown chert 96-4, trace galena
75	80	Brown-buff dolomite, gray-brown chert 88-12, trace marcasite, few specks galena
80	85	Brown-buff dolomite, gray-brown chert 95-5, marcasite 2/10, few specks galena
85	90	Buff dolomite, gray dolomite 95-5, dark buff & reddish brown clay 5, marcasite 2
		GRAY - 89
90	95	Gray dolomite, buff dolomite (ravelling) 70-30, trace dark buff clay, marcasite 3/10
95	100	Brown-gray dolomite, some buff dolomite & chert ravellings, marcasite 2/10, specks galena
100	105	Brown-gray dolomite, gray dark-speckled dolomite 60-40, marcasite 1/10, specks galena
		BLUE - 103
105	107½	Gray dark-speckled dolomite, marcasite 4/10, specks galena
107½	110	Gray dark-speckled dolomite, marcasite 3/10, specks galena
110	112½	Brown dolomite limestone, gray dark-speckled dolomite 60-40, marcasite 2/10, specks galena
		OIL - 111
112½	115	Brown dolomitic limestone, dark brown shale 97-3, marcasite 2/10, specks galena
115	117½	Brown calcareous dolomitic limestone, dark brown shale 95-5, marcasite 1, trace blende, specks galena
117½	120	Light brown dolomitic limestone, trace calcite, dark brown shale 2, marcasite ½, trace galena, few specks blende
120	122½	Brown dolomitic limestone, dark brown shale 96-4, marcasite 4/10, few specks blende & galena
122½	125	Gray-brown dolomitic limestone, green clay 60-40, marcasite 2/10
		CLAY - 124
125	127½	Bentonite, light brown dolomitic limestone 60-40, marcasite 3/10, specks galena
		GLASS - 126½
127½	130	Brown dolomite, marcasite ½
130	132½	Dark brown dolomite, dark brown shale 99-1, marcasite 4/10
132½	135	Dark brown dolomite, dark brown shale 3, marcasite 4/10
135	137½	Dark brown dolomite, gray dolomitic limestone 60-40, marcasite 4/10
		McGREGOR - 136½

Water table: 57'

2849

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 1~~
Hole No. 1
Collar Elevation: 1000.12'
Depth of Hole: 102.6'(Measurement by steel tape)
Location: Fred Heim

Date completed: 10/24/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Brown soil	
5	10	Sticky dark buff clay, some brown chert	
10	15	Sticky dark buff clay, buff dolomite, brown & tan chert 60-35-5, few specks marcasite	
15	20	Buff dolomite, tan & gray-brown chert 92-8, trace limonite	
20	25	Buff dolomite, tan & gray-brown chert 93-7, trace limonite (fairly coarse cuttings)	
25	30	Coarse cuttings: buff dolomite, buff dolomite with dark brown specks (coarse grained) 80-20, tan chert 1	
30	35	Buff dolomite with dark brown shale, trace tan chert, trace limonite, few specks calcite	
35	40	Brown dolomite, tan & gray-brown chert 92-8, buff dolomite with dark brown specks 5, trace calcite, marcasite 2/10	
40	45	Brown dolomitic limestone, tan chert 97-3, marcasite 1/10	
45	55	Brown dolomitic limestone & tan limestone, trace brown chert, trace marcasite	
55	60	Brown-gray dolomite, few specks marcasite, few specks calcite	GRAY - 55
60	65	Brown-gray dolomite, trace marcasite, specks calcite	
65	70	Dark gray dark-speckled dolomite, brown-gray dolomite 80-20, trace marcasite	BLUE - 66
70	72½	Dark gray dark-speckled dolomite, few specks marcasite	
72½	75	Dark gray dark-speckled dolomite, specks marcasite	
75	77½	Brown & tan fossiliferous limestone, gray dark-speckled dolomite 70-30, specks marcasite	OIL - 75.7
77½	85	Brown & tan fossiliferous limestone, trace brown shale, few specks marcasite	
85	87½	Light brown limestone & brown limestone, specks marcasite	
87½	90	Dark gray fossiliferous limestone, brown-gray dark-speckled limestone, green clay 60-30-10, specks marcasite	CLAY - 88.2
90	92½	Bentonite, pale brown limestone 60-40, marcasite 1/10	GLASS - 91.5
92½	95	Coarse cuttings: brown & tan limestone, trace dark brown shale, few specks marcasite	
95	97½	Brown & tan limestone, trace dark brown shale, specks marcasite	
97½	100	Dark brown limestone & very dark brown shale 98-2, specks marcasite	
100	102½	Brown limestone, gray limestone, gray dolomitic limestone, dark brown shale 60-30-9-1, marcasite 1/10	McGREGOR - 101.5

Water table: 40'

Water very weak - just enough to drill with
Formations firm all the way.

2859

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 2~~
Hole No. 2
Collar Elevation: 1031.00'
Depth of Hole: 146.0 (Measurement by steel tape)
Location: Fred Heim

Date completed: 10/30/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown soil
5	10	Buff clay
10	15	Buff clay-tan chert 95-5
15	20	Buff-clay-tan & brown chert 94-6
20	25	Coarse cuttings: Dark buff limonite/speckled dolomite-brown chert 70-30, trace buff chert, speck limonite & marcasite
25	30	Dark buff limonite/speckled dolomite-buff & gray/brown chert-brown clay 80-15-5, trace dull green shale, thin trace limonite specks marcasite
30	35	Coarse cuttings: Dark buff limonite/speckled dolomite-light brown chert 94-6, speck marcasite
35	40	Coarse cuttings: dark buff limonite/speckled dolomite-gray/ brown chert 96-4, speck marcasite
40	45	Coarse cuttings: dark buff limonite/speckled dolomite-tan & brown chert 95-5, few specks galena
45	50	Coarse cuttings: buff limonite/speckled dolomite-tan & brown chert 93-7
50	55	Buff limonite/speckled dolomite-tan chert 90-10
55	60	Coarse cuttings: dark buff limonite/speckled dolomite-tan & gray/brown chert 96-4
60	65	Dark buff limonite/speckled dolomite-tan chert 92-8, limonite ½
65	70	Buff & dark buff dolomite-tan chert 98-2, limonite 3/10
70	75	Buff dolomite-dark buff limonite speckled clay & dolomite mixed-tan chert 80-17-3, limonite 2/10
75	80	Dark buffish/brown dolomitic limestone-gray/brown, tan & buff chert 70-30, trace limonite
80	85	Dark buff dolomite-tan & gray/brown chert 94-6, trace marcasite
85	90	Buffish/brown dolomitic limestone-tan & gray/brown chert 96-4, few specks marcasite.
90	95	Dark buff & brown/buff dolomite-trace tan chert, trace limonite, few sand grains
95	100	Dark buff dolomite-gray dolomite 80-20, trace chert ravellings, trace marcasite GRAY 99
100	102½	Buff stained gray dolomite-buff dolomite-& chert ravellings 10, trace marcasite
102½	105	Gray dolomite-buff dolomite & chert ravellings 20, few sand grains, trace marcasite, speck galena
105	107½	Brown/gray dolomite-dark buff dolomitic limestone with brown specks-brown/gray & tan chert ravellings 40-40-20, few specks marcasite
107½	110	Gray dark-speckled dolomite-trace gray clay-gray/brown & tan chert ravellings 30, dark buff dolomitic limestone with/brown specks (friable) 10, trace marcasite BLUE 109½
110	112½	Gray dark/speckled dolomite-buff dolomite & chert ravellings 50, few specks marcasite
112½	115	Gray dark/speckled dolomite-buff dolomite & chert ravellings 60, trace marcasite
115	117½	Gray dark/speckled dolomite-tan fossiliferous limestone 80-20, buff dolomite & chert ravellings 20, marcasite 1/10, speck galena OIL 117

Continued

286a

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 2~~
Hole No. 2 (Continued)
Collar Elevation: 1031.00'
Depth of Hole: 146.0' (Measurement by steel tape)
Location: Fred Heim

Date completed: 10/30/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
117½	120	Tan fossiliferous limestone-buff dolomite & chert ravellings 20, marcasite 2/10, speck galena	
120	122½	Light brown limestone-few fossils, marcasite 1/10, speck galena	
122½	125	Light brown fossiliferous limestone-marcasite 2/10, speck galena	
125	127½	Light brown limestone (fairly coarse flaky cuttings)-brown dolomitic limestone 97-3, marcasite 1/10	
127½	130	Light brown limestone & gray/brown dark/speckled limestone-trace green shale, marcasite 1/10	CLAYBED 130
130	132½	Coarse cuttings: light gray/brown limestone & dark gray fossiliferous limestone 80-20, trace marcasite	GLASS 130½
132½	135	Coarse cuttings: Brown limestone-trace fossils, marcasite 3/10	
135	137½	Coarse flaky cuttings: Brown limestone-trace marcasite	
137½	140	Dark brown & tan limestone-trace marcasite	
140	142	Dark brown & tan limestone (coarse flaky cuttings)-trace marcasite	
142	144	Brown & tan limestone (rather coarse cuttings)-trace dark brown shale, trace marcasite	McGREGOR 144
144	146	Gray dolomitic limestone-trace brown limestone, few specks marcasite	

Water table: 27'

Slide from 80 to 85
Shot hole twice

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 7~~
Hole No. 3
Collar Elevation: 1025.32'
Depth of Hole: 125.5' (Measurement by steel tape)
Location: Fred Heim

Date completed: 11/1/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Buff clay
10	15	Buff dolomite, buff clay, gray-brown chert 40-40-20, few specks marcasite
15	20	Coarse cuttings: Buff dolomite, gray-brown chert 95-5, Few specks marcasite
20	25	Coarse cuttings: Buff limonite-speckled dolomite, gray-brown chert 94-6
25	30	Buff clay, buff dolomite (coarse cuttings), gray-brown Chert 50-47-3, few specks limonite
30	35	Buff dolomite (coarse cuttings), buff clay 90-10, gray-brown chert 7
35	45	Coarse cuttings: Dark buff limonite-speckled dolomite, gray-brown & tan chert 90-10
45	55	Coarse cuttings: Buff dolomite, tan & gray-brown chert 97-3 few specks limonite
55	60	Coarse cuttings: Buff calcareous dolomite & limonite-stained dolomitic limestone, gray-brown chert 2
60	65	Dark buff limonite-stained calcareous dolomitic limestone, tan chert 4, calcite 10
65	70	Dark buff dolomite, gray-brown chert 70-30
70	80	Dark buff calcareous dolomite, gray-brown chert 88-12, calcite 8, few specks limonite
80	85	Buff dolomite, gray dolomite 75-25, some chert ravellings, calcite 20, marcasite 1 GRAY 80?
85	87½	Dark buff dolomite, gray dolomite 90-10, calcite 10, some chert ravellings, marcasite 1
87½	90	Dark buff dolomite & chert ravellings, gray dolomite 95-5, calcite 5, marcasite 3/10
90	92½	Coarse cuttings: Buff dolomite & chert ravellings, gray clay 5, marcasite 1/10
92½	95	Dark buff dolomite & chert ravellings, gray dark-speckled dolomite 10, marcasite 1/10 BLUE 92½
95	97½	Dark buff dolomite & chert ravellings, gray dark-speckled dolomite & gray clay 85-15, calcite 2, trace marcasite
97½	100	Dark buff dolomite & chert ravellings, trace gray dark-speckled dolomite, trace calcite, trace marcasite
100	102½	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 60-40, calcite ½, trace marcasite OIL 100
102½	105	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 70-30, calcite 5, trace marcasite
105	110	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 70-30, calcite 1, marcasite 2/10, specks blende
110	112½	Light tan fossiliferous limestone, light green clay, dark buff dolomite ravellings 80-10-10, calcite 3, marcasite 1/10 CLAY 112
112½	115	Dark gray fossiliferous limestone & green clay, dark buff dolomitic ravellings 5, few specks phosphate 1/10
115	117½	Pale brown limestone, trace gray clay & dark gray fossiliferous limestone, calcite 10, trace marcasite GLASS 115

Continued

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 7~~
Hole No. 3 (Continued)
Collar Elevation: 1025.32'
Depth of Hole: 125.5' (Measurement by steel tape)
Location: Fred Heim

Date completed: 11/1/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
117½	120	Pale brown limestone, marcasite 1/10
120	122½	Brown & pale brown limestone, trace dark brown clay, trace marcasite
122½	125	Pale brown limestone, light gray dolomitic limestone 60-40, some dark buff dolomitic ravellings, marcasite 1/10 McGREGOR 124

Water table: 54'

289a

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 3~~
Hole No. 4
Collar Elevation: 994.81'
Depth of Hole: 101.0' (Measurement by steel tape)
Location: Fred Heim

Date completed: 11/4/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	10	Dark buff clay
10	15	Ochre clay
15	20	Ochre clay-tan & buff chert 95-5, calcite 2
20	25	Coarse Cuttings: Calcite-buff dolomite-tan chert 50-35-15, limonite 1
25	30	Coarse Cuttings: Calcite-buff dolomite-tan chert 50-40-10, limonite 2
30	35	Coarse Cuttings: Dark buff dolomite-tan & gray/brown chert 85-15, calcite 12, limonite ½
35	40	Coarse Cuttings: Dark buff dolomite-tan & gray/brown chert 88-12, calcite 10, limonite 4
40	45	Light buff dolomite-tan chert 95-5, trace brown chert, white clay 1, calcite 1, limonite & marcasite 2/10 GRAY 45
45	50	Coarse cuttings: Gray dolomitic limestone-some chert ravellings, calcite 5, marcasite & limonite 3/10
50	52½	Gray dolomitic limestone-little buff dolomite ravellings, calcite 3, marcasite 8/10, speck blende
52½	55	Gray dolomitic limestone-marcasite 3/10, speck blende, calcite
55	57½	Coarse cuttings: Gray dolomitic limestone-trace marcasite, speck blende, calcite 1
57½	60	Coarse cuttings: Gray dolomitic limestone-trace calcite, few specks marcasite BLUE 60
60	62½	Gray dark/speckled dolomite-gray clay 4, few specks marcasite
62½	65	Coarse cuttings: Gray dark/speckled dolomite,-few specks marcasite
65	67½	Coarse cuttings: Gray dark/speckled dolomite-trace marcasite
67½	70	Coarse cuttings: Gray dark/speckled dolomite-few specks marcasite OIL 70
70	72½	Coarse cuttings: Tan fossiliferous limestone-trace gray dark speckled dolomite, few specks marcasite
72½	75	Coarse cuttings: light brown fossiliferous limestone-few specks marcasite
75	77½	Light brown fossiliferous limestone-brown shale 99-1, few specks marcasite & galena
77½	80	Pale brown & brown limestone-few fossils-marcasite 1/10
80	82½	Light brown & brown limestone-trace limonite & marcasite, few specks galena
82½	85	Light gray dark/speckled limestone-trace marcasite (few coarse cuttings) CLAY 85
85	87½	Coarse cuttings: Brown/gray & light gray limestone-trace gray clay, dark gray fossiliferous limestone 20, trace marcasite
87½	90	Coarse cuttings: Light brown limestone-marcasite 1/10 GLASS 85½
90	92½	Coarse cuttings: Brown & light brown limestone-marcasite 1/10
92½	95	Coarse cuttings: Rather dark brown limestone, calcite ½, marcasite 2/10 McGREGOR 97½
95	97½	Brown & tan limestone-marcasite 1/10, speck blende
97½	100	Gray dolomitic limestone-trace marcasite

Water table: 75'

290a

Lafayette County
Sec[illegible]ef. 212

~~Serial No. 4~~
Hole No. 5
Collar Elevation: 979.76'
Depth of Hole: 98.0 (Measurement by steel tape)
Location: Fred Heim

Date completed: 11/7/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Dense brown/buff dolomite and coarse grained buff dolomite, trace gray chert, red brown clay 20, trace limonite
10	15	CRS CUTS: Brown buff dolomite and coarse grained buff dolomite, trace tan chert, few specks limonite
15	20	CRS CUTS: Buff limonite speckled dolomite and dense brown/buff dolomite, tan chert 1
20	25	CRS CUTS: Pale buff dense dolomite and coarse grained buff dolomite
25	30	Pale buff dense dolomite, trace light gray/brown chert
30	40	Pale buff dense dolomite-tan chert 95-5, thin trace marcasite
40	45	Light tan dolomitic limestone, few specks marcasite
45	50	Gray dolomitic limestone, trace marcasite GRAY - 45
50	52½	Gray dolomitic limestone, specks green shale, speck marcasite
52½	55	Gray dolomitic limestone, trace green shale, few specks marcasite
55	57½	Light brown/gray dolomitic limestone (CRS CUTS) few specks marcasite
57½	60	Light brown/gray dolomitic limestone, some fossils, specks marcasite BLUE - 60
60	62½	Gray dark speckled dolomite, trace green shale, few specks marcasite
62½	65	Gray dark speckled dolomite (CRS CUTS) thin trace marcasite
65	67½	Gray dark speckled dolomite, few fossils, thin trace marcasite
67½	70	Dark gray fossiliferous dolomite (CRS CUTS) trace gray clay, green shale 2, few specks marcasite OIL - 70
70	72½	Brown fossiliferous limestone, few specks marcasite
72½	75	Brown fossiliferous limestone-dark brown shaly limestone 99-1, speck marcasite
75	80	Brown fossiliferous limestone-dark brown shaly limestone 96-4, trace marcasite
80	82½	Brown and gray/brown fossiliferous limestone, thin trace marcasite CLAY - 83
82½	85	Dark gray fossiliferous limestone-light gray clay-gray/brown limestone-green shale 65-13-20-2, trace marcasite
85	87½	Pale brown limestone-light gray clay 90-10, trace dark gray fossiliferous limestone, trace marcasite GLASS - 86
87½	90	Brown and tan limestone, trace dark brown shale, trace marcasite
90	92½	Brown and tan limestone, few specks dark brown shale, few specks marcasite, FEW SPECKS BLENDE
92½	95	Dark brown limestone-black shaly limestone 99-1, thin trace marcasite, SPECK BLENDE
95	97½	Brown limestone-limonite stained shaly clay-gray dolomitic limestone-black shaly limestone 70-23-5-2, some fossils, speck marcasite McGREGOR - 97.4

Water table: 41'

2919

~~Serial No. 5~~
Hole No. 6
Collar Elevation: 999.57'
Depth of Hole: 110.0' (Measurement by steel tape)
Location: Heim

L[illegible]yette County
~~Sec. Ref. 212~~

Date completed: 11/11/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Brown clay
5	10	Red/brown clay, trace chert
10	15	CRS CUTS: Buff dolomite-red brown clay 1, speck marcasite, few specks chert
15	20	CRS & EXTRA CRS CUTS: Buff dolomite-red/brown chert clay 80-20, gray/brown chert 3
20	25	CRS CUTS: Buff dolomite-red/brown clay-gray/brown chert 50-35-15
25	35	Buff dolomite-gray/brown chert 88-12, trace limonite
35	40	Buff dolomite-gray/brown chert 98-2, calcite 4, trace limonite
40	45	Buff dolomite-tan and gray/brown chert 95-5, calcite 2, trace limonite
45	50	CRS CUTS: Brown/buff dolomite-tan and gray/brown chert 85-15, calcite 4, trace limonite
50	55	Buff dolomite-tan and brown chert 96-4, calcite 2, trace limonite
55	60	Brown dolomite-gray dolomite 90-10 (CRS CUTS) trace calcite, marcasite 1/10 GRAY - 59½
60	65	Gray dolomite-brown/buff dolomite 70-30, calcite 1, trace marcasite
65	70	Brown/gray dolomite-buff dolomite ravellings 10, few specks marcasite
70	72½	Gray/brown dolomite, calcite 2, few specks marcasite and limonite
72½	75	Gray dark speckled dolomite-gray/brown dolomite 80-20, trace fossils, some buff clay and chert ravellings, thin trace limonite and marcasite, trace gray clay, calcite 2 BLUE - 73
75	77½	Gray dark speckled dolomite, calcite 1, few specks marcasite, some buff dolomite and chert ravellings
77½	80	Gray dark speckled dolomite, calcite 1, few fossils, some buff dolomite and chert ravellings, few specks marcasite
80	82½	Gray dark speckled dolomite-green shale 2, gray clay 1, speck marcasite OIL - 82½
82½	85	Tan and brown fossiliferous limestone, few specks marcasite, A SPECK BLENDE
85	90	Tan and brown fossiliferous limestone-dark brown shaly limestone 95-5, trace marcasite
90	92½	Brown and tan limestone-dark brown shaly limestone 92-8, few fossils, few specks marcasite
92½	95	Brown and tan limestone-light gray dark speckled limestone 80-20, few specks marcasite
95	97½	Pale brown limestone-dark gray fossiliferous limestone 60-40, trace green shale, trace marcasite CLAY - 95 GLASS - 96
97½	100	Brown and tan limestone, trace calcite, trace marcasite
100	102½	Brown dolomitic limestone and tan limestone with brown dolomite speckled, trace calcite, trace marcasite
102½	105	Rather dark brown limestone and tan limestone, trace dark brown shale, trace marcasite, few specks calcite
105	107½	Dark brown limestone and tan limestone-dark brown shaley limestone 98-2, few specks marcasite
107½	110	Gray dolomitic limestone-brown limestone-dark brown shale 90-9-1, trace marcasite McGREGOR - 107.8

Water table: 63'

2929

Lafayette County
~~Sec. Ref. 212~~

~~Serial No. 6~~
Hole No. 7
Collar Elevation: 993.60'
Depth of Hole: 92.7' (Measurement by steel tape)
Location: Heim

Date completed: 11/13/52
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Soil
5	10	Brown and red clay
10	15	Dark buff dolomite-buff clay-buff and gray/brown chert 60-35-5
15	20	Dark buff dolomite-gray/brown chert 92-8, trace limonite, trace calcite
20	25	Dark buff dolomite-gray brown chert 95-5, trace limonite, calcite ½ (CRS CUTS)
25	30	Dark buff dolomite-tan and gray brown chert 90-10, few specks limonite (CRS CUTS)
30	35	Red clay-dark buff dolomite (CRS CUTS)-gray/brown chert 50-40-10, trace limonite, few coarse pieces of calcite
35	40	Limonite stained clay-gray/brown chert (CRS) 80-20, limonite 5, few coarse pieces calcite
40	45	Dark limonite stained dolomite-gray/brown chert 70-30, limonite 8, calcite 2
45	50	Dark limonite stained dolomite-gray/brown chert 75-25, limonite 10, calcite 3
50	55	Dark brown and tan chert-dark buff dolomite 90-10, marcasite 10, limonite 4, calcite 7 GRAY - 55
55	60	Gray dolomite-brown, tan and buff chert ravellings 10, marcasite and limonite 5, FEW SPECKS GALENA, calcite 1
60	62½	Chert ravellings-gray dolomite 70-30, marcasite and limonite 8, calcite 5, FEW SPECKS BLENDE
62½	65	Chert ravellings-limonite stained dolomite 90-10, marcasite and limonite 10, calcite 5, SPECK BLENDE
65	67½	EXTRA COARSE CUTS: Chert ravellings-marcasite and limonite 6, calcite 2
67½	70	Chert ravellings-limonite stained clay 95-5, limonite and marcasite 7, calcite 1 BLUE - 70
70	72½	Chert ravellings (CRS)-limonite-marcasite 95-4-1, calcite 5
72½	75	EXTRA CRS CUTS: Chert ravellings-limonite stained dolomite 90-10, trace gray clay, limonite and marcasite 4, calcite 2
75	77½	CRS CUTS: Chert ravellings-trace gray dark speckled dolomite-limonite and marcasite 3, calcite 1
77½	80	Tan fossiliferous limestone-little chert ravellings, marcasite and limonite 5, calcite 4, FEW SPECKS BLENDE OIL -- 77½
80	82½	Tan fossiliferous limestone-considerable ravellings from overlying beds-marcasite and limonite 8 BLENDE 1/2 (?)
82½	85	Tan fossiliferous limestone-little ravellings from overlying beds-marcasite and limonite 5, BLENDE 2/10
85	87½	Green clay-some ravellings from overlying beds, trace phosphate, marcasite 2, SPECK BLENDE CLAY - 85 GLASS - 87½
87½	90	RATHER CRS CUTS: Brown limestone, marcasite and limonite 1
90	92½	Gray dolomitic limestone-chert ravellings 15, limonite ravellings 15, marcasite 2 McGREGOR 90

Impossible to pick beds
Broken ground 30 to 77½

Water table: 39'

293a

~~Serial No. 8~~
Hole No. 8
Collar Elevation: 995.5'
Depth of Hole: 100.5' (Measurement by steel tape)
Location: Fred Heim

Lafayette County
~~Sec. Ref. 212~~

Date completed: 2/24/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology
0	5	Black soil
5	10	Buff clay
10	15	Buff clay, Buff dolomite, buff chert 60-38-2
15	20	Buff clay, buff dolomite, buff, brown, gray & white chert 50-45-5
20	25	Buff dolomite, reddish-brown clay, tan & brown chert 70-28-2
25	30	Buff dolomite, dark brown dolomitic limestone, reddish-brown clay 60-30-10, tan & brown chert 6
30	35	Sample missing
35	40	Reddish-brown clay, brown & dark brown dolomitic limestone 60-40, brown, tan & buff chert 8, few specks marcasite
40	45	Brown dolomite, reddish-brown clay, brown chert & tan chert 70-15-15
45	50	Brown & tan dolomitic limestone, brown chert 98-2, few specks marcasite
50	55	Buffish-brown dolomitic limestone, gray dolomite 98-2, trace brown chert, trace calcite, few specks marcasite — GRAY - 52½
55	60	Dark buff dolomite, buff clay, light brown dolomitic limestone 90-8-2, few specks marcasite
60	65	Buff dolomitic limestone, gray dolomite 90-10, few specks marcasite & calcite
65	67½	Buff dolomitic limestone, gray dark-speckled dolomite 99-1, chert ravellings 6, few specks marcasite — BLUE - 67
67½	70	Buff dolomitic limestone, brown & gray clay 80-20, calcite 25
70	72½	Calcite, gray clay, buff dolomitic limestone 90-5-5, marcasite 10
72½	75	Calcite, tan fossiliferous limestone, buff dolomite 70-25-5, marcasite & limonite 20 — OIL - 74½
75	77½	Tan fossiliferous limestone, marcasite & limonite 18, calcite 15
77½	80	Brown limestone, calcite 10, marcasite & limonite 22
80	82½	Brown fossiliferous limestone, calcite 10, marcasite & limonite 16
82½	85	Light brown limestone, calcite 3, marcasite & limonite 3
85	87½	Light brown limestone, calcite 5, trace gray clay, marcasite 25
87½	90	Gray clay, light brown limestone 80-20, few specks phosphate, calcite 5, marcasite 10 — CLAY - 88
90	92½	Gray clay, brown dolomite 90-10, dark buff dolomite & brown chert ravellings, marcasite 8 — GLASS - 92½
92½	95	Brown clay & shale, few specks brown dolomite, marcasite 9, calcite 3
95	97½	Brown limestone, dark buff dolomitic ravellings 5, marcasite 12, calcite 3 — McGREGOR - 97.7
97½	100	Gray dolomitic limestone, brown limestone 90-10, calcite 5, marcasite 4

Water table: 41½'

Continued

299a

Lafayette County
~~Sec. Ref. 212~~

~~Serial~~ No. 8
Hole No. 8 (Continued)
Collar Elevation: 995.5'
Depth of Hole: 100.5' (Measurement by steel tape)
Location: Fred Heim

Date completed: 2/24/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	To	ZnS	Assays FeS_2	PbS
70	72½	0.30	8.60	Nil.
72½	75	0.25	32.00	Nil.
75	77½	0.30	26.70	Nil.
77½	80	0.20	35.70	Nil.
80	82½	0.20	28.60	Nil.
82½	85	0.30	20.90	Nil.
85	87½	0.55	8.60	Nil.
87½	90	0.30	19.80	Nil.

295a

~~Serial No. 9~~
Hole No. 9
Collar Elevation: 1004.06'
Depth of Hole: 108.4' (Measurement by steel tape)
Location: Fred Heim

Lafayette County
~~Sec. Ref. 212~~

Date completed: 2/27/53
Drilled by: Eagle-Picher, DMA
Logged by: Davis
Type of Drilling: Churn

Depth From	Depth To	Lithology	
0	5	Black soil & red & brown clay	
5	15	Burnt orange clay	
15	25	Burnt orange clay, few specks chert	
25	30	Dark buff limonite-speckled dolomite, buff clay, gray-brown & tan chert 70-20-10, few specks marcasite	
30	35	Buff dolomite, tan chert 99-1 (sample quite muddy)	
35	40	Buff dolomite, tan chert 96-4, buff & brown clay 3, specks marcasite	
40	45	Buff dolomite, tan chert 95-5, buff & brown clay 5, few coarse pieces limonite	
45	50	Coarse cuttings: Dark buff limonite-speckled dolomite, tan gray-brown & buff chert 82-18, calcite 2, limonite 10	
50	55	Coarse cuttings: Dark buff dolomite, tan & gray-brown chert 85-15, burnt orange clay 5, calcite 4, limonite 2	
55	60	Gray-brown & tan chert, dark buff dolomite 80-20, calcite 5, limonite & marcasite 8	
60	65	Gray dolomite, chert ravellings 60-40, limonite (coarse) 6, calcite 3, marcasite 1	GRAY - 60
65	70	Coarse cuttings: Gray dolomite, chert ravellings 10, limonite 5, marcasite 1, calcite 1	
70	72½	Gray dolomite, chert ravellings 8, calcite 4, marcasite 1, limonite ½	
72½	75	Gray dolomite, chert ravellings 4, calcite 4, marcasite & limonite 2	
75	77½	Gray dark-speckled dolomite, gray clay 85-15, calcite 1, marcasite 1	BLUE - 75
77½	80	Gray dolomitic ravellings, gray dark-speckled dolomite, gray clay 60-30-10, some chert ravellings, marcasite ½, trace calcite	
80	82½	Gray dark-speckled dolomite, considerable ravellings of chert & "Gray" formation & a little buff dolomite, marcasite 2	
82½	85	Tan fossiliferous limestone, gray dark-speckled dolomite 80-20, some ravellings from overlying bed, marcasite 1	OIL - 83
85	87½	Tan fossiliferous limestone, some ravellings of overlying beds, marcasite 1½	
87½	90	Tan fossiliferous limestone, marcasite 2½	
90	92½	Tan limestone, marcasite 2	
92½	95	Green clay, tan & gray-brown limestone 80-20, marcasite 3/10, few specks phosphate	
95	97½	Brown dolomitic limestone, some chert ravellings, marcasite 12	CLAY - 93
97½	100	Brown dolomitic limestone, some chert ravellings, marcasite 6	GLASS - 95
100	102½	Gray dolomitic limestone, some chert ravellings, marcasite 3/10	McGREGOR - 100
102½	107½	Gray dolomitic limestone, marcasite 1/10	

Water table: 50½'

Elevations

Calumet F.M.		1	965.42
	9	2	956.67
	10		
	11	3	966.10
	12		
	13		
	14	4	994.45
	1008.84		
		5	998.46
		6	949.50
		7	932.03
		8	959.55

Calumet Est. tr. 1	1	938.61
	2	943.62
	3	948.99
	4	952.20
	6	963.60
	7	972.57
	8	980.77
	9	963.81
	10	981.20
	11	979.13
	12	973.63
	13	966.47
	14	972.14
	15	990.25
	16	979.61
	17	993.50
	18	982.95

Calumet Est. tr. 1	39	965.81
	40	1021.61

19	976.22
20	1015.61
21	1011.73
22	1008.23
23	979.95
24	974.97
25	969.58
26	951.48
27	972.98
28	970.77
29	970.79
30	957.17
31	974.16
32	976.26
33	961.48
34	965.65
35	964.88
36	978.53
37	982.41
38	973.33

Calumet Est. tr. 2	1	913.64
	2	923.21
	3	936.60
	4	948.34
	5	942.07

Calumet Est. Tr. 3			1	946.05	Curtis, C.	1	952.50
	20	948.70	2	943.23		2	958.89
	21	935.04	3	948.97			
			4	945.94	Cole, V.B.	1	991.09
			5	948.34		2	972.70
			6	950.96		3	1002.03
			7	949.44		4	990.14
			8	946.47		5	1000.42
			9	934.99		6	1001.19
			10	912.71		7	1002.50
			11	937.51		8	1000.54
			12	946.74		9	1008.31
			13	950.45		10	1024.59
			14	957.58		11	1005.18
			15	945.60		12	1006.12
			16	932.79		13	1015.06
			17	942.60		14	998.47
			18	911.68		15	1001.21
			19	922.31		16	1007.94
					Snyder, W.F.	1	1007.57
Busch, C.J.			1	952.62		2	1009.49
	8	977.75	2	942.04		3	988.01
	9	984.38	3	970.31		4	1017.89
	10	972.05	4	968.70		5	1010.99
	11	991.85	5	958.18			
			6	983.46	Wilkinson, Fur & Frank.	1	1026.19
			7	990.27		2	986.95

Heim, F.			1	1000.12
			2	1031.00
	8	995.39	3	1025.32
	9	1004.06	4	994.81
			5	979.76
			6	999.57
			7	993.60
Spleiter, A.J.			1	1010.85
			2	1017.73
			3	1010.27
			4	1013.22
Heiderman, H.V.			1	999.66
			2	1028.33
			3	1028.17
			4	1021.79
			5	1002.81
Heim, D.J.			1	1012.05
			2	1012.23
			3	997.72
Ilberman, F.W.			1	1016.25
	5	957.17		
	6	989.41	2	990.62
	7	960.95		
			3	1014.27
			4	956.92

Horstaker, R.F.	1	1026.69
	2	1001.31
	3	1043.92
	4	993.24
Ralph, C.P.	1	939.54
	2	931.43
	3	949.35
	4	979.46
Reich, V.	1	969.30
	2	970.68
	3	882.47
	4	907.49
	5	953.35
Wiseman, B.	1	929.01
	2	971.95
Gray, J.O.	1	996.86
	2	1035.00

Iron main

Geologist: Harold W. Lavis

DRILL RECORD
The [illegible] Company

HOLE NO. 6

Property Name: CLARENCE J. BUSCH
Began: 12-4-52 Finished: 12-10-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Black & brown soil
5	10	Buff clay
10	15	Light buff dolomite (Coarse Cuttings), buff clay 95-5, few specks limonite
15	20	Light buff dolomite (Coarse Cuttings), buff clay 98-2, trace limonite
20	30	Brown-buff dolomite (some coarse cuttings), trace limonite
30	40	Pale brown-buff dolomite, trace limonite
40	45	Pale brown-buff dolomite, few specks limonite
45	50	Buff dolomite, few specks light gray chert, few specks limonite DRAB - 50
50	55	Brown-buff dolomite, gray & light gray chert 92-8, few specks limonite
55	60	Brown-buff dolomite, gray & buff chert 91-9, trace limonite
60	65	Buff dolomite, buff & gray chert, limonite-stained clay 75-20-5, limonite p, thin trace galena
65	70	Buff dolomite, buff & gray chert, limonite-stained clay 75-24-1, limonite 2/10, few specks galena
70	75	Buff dolomite, gray & buff & white chert 93-7, limonite 1/10
75	80	Buff dolomite, gray & white chert 95-5, limonite 1/10
80	85	Pale buff dolomite, gray, white & buff chert 80-20, limonite 2/10
85	90	Pale buff dolomite, gray, white & buff chert 93-7, trace limonite
90	100	Buff dolomite, gray & white chert 93-7, trace limonite-stained clay, trace limonite
100	110	Pale buff dolomite, gray & white chert 8[illegible]-12, trace limonite, a speck marcasite
110	115	Pale buff & buff dolomite, gray & white chert 92-8, trace limonite, few specks marcasite
115	120	Light gray dolomite, white chert 95-5, limonite & marcasite blende 8/10
120	125	Buff dolomite, white chert 97-3, limonite & marcasite 1, blende 3/10
125	130	Pale buff & buff dolomite, white chert 98-2, limonite & marcasite 1, few specks blende
130	140	Brown & buffish-brown dolomite, gray & tan chert 94[illegible] marcasite 3
140	145	Brown dolomite, gray chert 95-5, marcasite 4
145	150	Brown dolomite, trace gray chert, marcasite 6
150	155	Gray dolomite, few specks calcite, marcasite [illegible] blende, trace buff dolomitic ravellings (GRAY
155	157½	Gray dolomite, buff dolomitic ravellings 3, stained clay, marcasite 1½
157½	160	Brown-gray dolomite, dark buff dolomite 90-10,

(Continued on next page)

Property Name: CLARENCE J. BUSCH

From	To	
160	162½	Brown-gray dolomite, dark buff dolomite 99-1, marcasite 2½
162½	165	Gray dolomite, dark buff dolomite 2, marcasite 3
165	167½	Gray dark-speckled dolomite, marcasite 2 BLUE - 165
167½	170	Gray dark-speckled dolomite, marcasite 2
170	172½	Gray dark-speckled dolomite, marcasite 1½
172½	175	Brown dolomitic limestone, gray dark-speckled dolomite 95-5, marcasite 1 OIL - 172.6
175	177½	Brown dolomitic limestone, brown shale 90-10, marcasite 1
177½	180	Dark brown dolomite, marcasite 4/10
180	182½	Gray & brown-gray dolomite, gray clay 80-20, marcasite 2/10 CLAY - 182
182½	185	Gray clay, dark brown dolomite 60-40, marcasite 2/10 GLASS - 184
185	187½	Gray dolomitic limestone, dark brown dolomite 60-40, trace dark brown shale, marcasite 3/10 McGREGOR - 186
187½	190	Gray dolomitic limestone, marcasite 2/10
190	192½	Gray dolomitic limestone, marcasite 1/10

Total depth 193.2' with steel tape.
Water at 58'

Land Description: Northeast ¼ of Northwest ¼, Twnsp 1 North, Rng 1 East

Location of Hole: 350' North & 100' West of Southeast corner of Northeast ¼ of Northwest ¼

Assays

	ZnS	FeS_2	PbS
115-120	1.30	2.60	nil.

81
816,5

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 7

Property Name: CLARENCE J. BUSCH
Began: 12-11-52 Finished: 12-18-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Elevation 990.27'
197
793

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Buff clay
10	15	Buff dolomite (coarse), buff clay 95-5, few specks limonite & marcasite
15	20	Light buff dolomite (coarse), few specks limonite & marcasite
20	30	Light buff dolomite (coarse), few specks limonite
30	40	Buff dolomite (some coarse cuttings)
40	50	Buff dolomite (some coarse cuttings)
50	60	Buff dolomite (some coarse cuttings)
60	70	Pale buff dolomite
70	75	Pale buff dolomite, trace limonite
75	80	Light buff dolomite, limonite 1/10
80	85	Light buff dolomite, limonite 2/10
85	90	Buff & light buff dolomite, limonite 2/10
90	95	Buff & light buff dolomite, trace calcite, limonite 3/10, few specks marcasite
95	100	Gray dolomite, buff dolomite 96-4, trace calcite, thin trace limonite & marcasite
100	105	Gray dolomite, gray & white chert 92-8, marcasite 2 DRAB - 102
105	110	Pale brown-gray dolomite, white chert 95-5, trace light green shale, marcasite 3, few specks blende
110	115	Pale brown-gray dolomite, white chert 97-3, marcasite 8
115	120	Pale brown-gray dolomite, gray & white chert 80-20, marcasite 6/10
120	130	Pale brown-gray dolomite, gray & white chert 94-6, few specks light green shale, marcasite ½, a speck blende
130	140	Pale brown-gray dolomite, white chert 93-7, marcasite 9/10
140	150	Pale brown-gray dolomite, white chert 96-4, few specks light green shale, marcasite 2
150	155	Pale brown-gray dolomite, white chert 99-1, marcasite 11
155	160	Pale brown-gray dolomite, white 92-8, marcasite 9, few specks blende
160	165	Pale brown-gray dolomite, white chert 94-6, marcasite 7
165	170	Pale brown-gray dolomite, few specks white chert, marcasite 6
170	175	Pale brown-gray dolomite, light gray dolomite 90-10, trace green shale, few specks white chert, marcasite 9/10 GRAY - 174½
175	180	Light gray dolomite, trace green shale, marcasite 2
180	185	Pale brown-gray dolomite, white chert 1, marcasite 4½
185	190	Pale brown-gray dolomite, white chert 1, trace green shale, marcasite 2½

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 7
Continued

Property Name: CLARENCE J. BUSCH

From	To	
		BLUE - 190
190	195	Gray dolomite with few dark specks, marcasite 4
195	200	Pale brown-gray dolomite with few dark specks 60-40, marcasite 1, massive dolomite OIL - 197
200	205	Brown & pale brown dolomite, marcasite 1
205	207½	Gray-brown dolomite, green shale & clay, dark gray fossiliferous limestone 60-30-10, few specks phosphate, marcasite 4/10 CLAY - 206½
207½	210	Gray-brown dolomite, marcasite 2/10 GLASS - 207½
210	212½	Dark brown dolomite, marcasite 3
212½	215	Gray dolomitic limestone, dark brown dolomite 60-40, dark brown shale 1, marcasite 1 McGREGOR - 213½
215	217½	Brown-gray dolomitic limestone, marcasite 5/10

Total depth measured 218.2' with steel tape.
Water at 63' from cellar

Apparently should have been chert at 70 ft. but none detected until 100 to 105. Very difficult to detect any variation of colors - all seemed so pale & colorless that driller did not start the half runs until in the Oil rock formation.

H. W. Davis

Land Description: Northeast ¼ of Northwest ¼, Twnsp 1 North, Rng 1 East

Location of Hole: 900' West from Drill Hole #6

Wisconsin Geologist: F. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: CLARENCE J. BUSCH
Began: 12-19-52, finished 12-30-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor
Location: 300' S. from DH #6

Hole No. 8
Total Depth 206

Elev. 1760
801

From	To	
0	5	Soil
5	10	Brown clay
10	15	Coarse cuttings: Buff dolomite-buff clay 90-10, trace limonite
15	20	Coarse cuttings: Buff dolomite-trace limonite
20	25	Buff dolomite-limonite 1/10
25	30	Buff dolomite-limonite 2/10
30	40	Coarse cuttings: Buff dolomite-limonite 1/10
40	50	Coarse cuttings: Buff dolomite-limonite 1/10
50	55	Light brown/buff dolomite-dark limonite/speckled buff dolomite 95-5, few specks limonite
55	60	Light brown/buff dolomite-dark limonite/speckled buff dolomite 95-5, few specks limonite
60	65	Pale buffish/brown dolomite-trace dark buff dolomite-few specks limonite
65	70	Brown/buff dolomite
70	75	Buffish/brown dolomite
75	80	Buffish/brown dolomite-white & light gray chert 75-25 DRAB 75
80	85	Buff dolomite-white, gray & buff chert 80-20, limonite 7
85	90	Buff dolomite-white, gray & buff chert 82-18, limonite 1
90	95	Pale buff dolomite-white & gray chert 93-7, limonite ½
95	100	Buff dolomite-white & gray chert 95-5, limonite 1/10
100	105	Buffish/gray dolomite-light gray chert 70-30, trace limonite (few coarse cuttings)
105	110	Gray dolomite-gray & white chert 97-3, limonite & marcasite 1/10 few specks blende
110	115	Gray dolomite-white chert 92-8, marcasite 8/10, blende 1/10
115	120	Gray dolomite-white chert 96-4, marcasite 1, blende ½
120	125	Pale brown/gray dolomite-white chert 99-1, marcasite 2/10, trace blende
125	130	Pale gray dolomite-few specks white chert, marcasite 2
130	135	Pale brown/gray dolomite-white chert (some marcasite/speckled) 96-4, marcasite 7
135	140	Pale gray dolomite-white & gray chert 85-15, marcasite 3, a speck blende
140	145	Pale gray dolomite-white & gray chert 87-13, marcasite 4
145	150	Pale gray dolomite-white chert 97-3, marcasite 2
150	155	Dark gray dolomite-marcasite 3 GRAY 150
155	160	Gray dolomite-marcasite 2
160	165	Brown/gray dolomite-trace calcite, marcasite 2
165	167½	Pale gray dolomite-trace calcite, marcasite 5
167½	170	Pale gray dolomite-dark gray dark/speckled dolomite 80-20, marcasite 1 BLUE 169½
170	172½	Gray dark/speckled dolomite-marcasite 6/10
172½	175	Dark gray dark/speckled dolomite-marcasite ½
175	177½	Dark gray dark/speckled dolomite-brown dolomite 60-40, marcasite 3/10 OIL 176½
177½	180	Pale gray dolomite-brown dolomite 70-30, trace brown shale, marcasite 2

(Continued on next page)

Property Name: CLARENCE J. BUSCH

Hole No. 8
(Continued)

From	To	
180	185	Brown dolomite-dark brown shale ½, marcasite 6/10
185	187½	Brown dolomite-trace dark brown shale, marcasite 2/10
187½	190	Brown dolomite-gray dark/speckled dolomite 70-30, marcasite 3/10 trace gray clay
190	192½	Gray/brown dolomite & dark gray fossiliferous limestone 60-40, marcasite 1/10 CLAY 191½
192½	195	Dark brown dolomite-trace marcasite
195	197½	Dark brown dolomite-marcasite 1/10
197½	200	Brown dolomite-trace gray & green shale-marcasite 15 McGREGOR 200.2
200	202½	Gray fine grained dolomite-brown dolomite 95-5, trace gray shale few specks green shale, marcasite 8
202½	205	Gray fine grained dolomite-gray (bentonite) shale 85-15, marcasite 5
205	206	Gray fine grained dolomite-gray (bentonite) shale 95-5, marcasite 5

TD 206.3' w.s.t.

Water at 55'

Assays: No.

Land Description: NE¼ of NW¼, Sec. 6, T 1 N, R1 E

Location of Hole: 300' S from DH #6.

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 9 (DNRA)

Property Name: CLARENCE J. BUSCH
Began: 12-31-52 Finished: 1-10-53
Drill Owner: Swalley
Drill Runner: L. Taylor

Elev. 984.38
182.6
802

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Brown clay
10	15	Buff dolomite, brown clay 90-10, trace gray shale
15	20	Buff dolomite (Coarse cuttings)
20	25	Buff dolomite (Few coarse cuttings), few specks marcasite
25	30	Buff dolomite (Coarse cuttings), a speck limonite & marcasite
30	35	Buff dolomite (Coarse cuttings) (Sample contaminated by introducing boulders in an attempt to straighten a crooked hole.)
35	40	Buff dolomite (Coarse cuttings), a speck limonite
40	45	Light buff dolomite, a speck limonite
45	50	Light buff & buff dolomite, few specks limonite
50	55	Brown-buff dolomite, few specks limonite
55	65	Brown-buff dolomite, few specks limonite
65	75	Brown-buff dolomite, few specks limonite
75	85	Brown-buff dolomite, few specks limonite
85	90	Brown-buff dolomite, light gray & white chert 93-7, trace limonite DRAB - 87½
90	95	Light buff & buff dolomite, white chert 92-8, some brown clay sloughing.
95	100	Pale buff dolomite, white chert 94-6, limonite 1/10
100	105	Pale buff dolomite, white chert 99-1, trace limonite-stained clay, limonite 2/10
105	110	Pale buff dolomite, white chert 85-15, limonite 2/10, marcasite 1/10
110	120	Pale buff dolomite, light gray & white chert 80-20, limonite 3/10, marcasite 1/10
120	130	Pale buff dolomite, white chert 93-7, limonite 2/10, marcasite 1/10
130	135	Pale buff dolomite, white chert 98-2, limonite-stained clay 1, limonite 3/10, trace marcasite
135	140	Light gray dolomite, white chert 92-8, marcasite 5
140	145	Light gray dolomite, white chert 88-12, marcasite 1
145	150	Light gray dolomite, white chert 80-20, marcasite 6/10
150	155	Light gray dolomite, white chert 99-1, marcasite 4/10 (Few coarse cuttings) a few coarse cuttings of buff dolomite
155	160	Light gray dolomite (some cuttings light green shade), buff dolomite 80-20, trace ochre clay, marcasite 2/10
160	165	Light gray dolomite (some cuttings light green shade), buff dolomite 97-3, marcasite 3/10 GRAY - 160?
165	170	Gray & brown-gray dolomite, marcasite 2/10
170	172½	Brown-gray dolomite, marcasite 1/10

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 9 (DMRA)

Property Name: CLARENCE J. BUSCH

From	To	
172½	175	Gray dolomite, gray dark-speckled dolomite 90-10, marcasite 2/10 BLUE - 174.8
175	177½	Gray dark-speckled dolomite, marcasite 5/10
177½	180	Gray dark-speckled dolomite, marcasite 3/10
180	182½	Dark gray dark-speckled dolomite, marcasite 2/10
182½	185	Brown dolomite, trace calcite, marcasite 5/10 OIL - 182.5
185	187½	Rather dark brown dolomite, trace calcite, marcasite 7/10
187½	190	Rather dark brown dolomite, dark brown shale 98-2, marcasite 1
190	192½	Rather dark brown dolomite, marcasite 4/10 CLAY - 194½
192½	195	Brown dolomite, light gray clay 80-20, trace gray dark-speckled dolomite, marcasite 1
195	197½	Green clay, gray dark-speckled fossiliferous limestone 90-10, marcasite 3/10
197½	200	Brown-gray dolomite, light gray clay 95-5, marcasite 2/10 (dolomite resembled McGregor) GLASS - 198 ?
200	202½	Dark brown dolomite, chocolate brown shale 99-1, marcasite 10
202½	205	Gray dolomite limestone, dark brown dolomite 90-10, marcasite 4/10
205	206	Gray dolomitic limestone, marcasite 3/10

Total depth measured 206.6' with steel tape.
Water at 59'.

NOTE: Driller had considerable trouble with the start of this hole. He thinks it might possibly be an old lead shaft that was filled in. Seemed to be unconsolidated boulders to 40 feet. Had to case it. Hole was quite crooked.

Land Description: Northeast ¼ of Northwest ¼

Location of Hole: 150' North & 250' West from Drill Hole #8

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 10 (DMRA)

Property Name: CLARENCE J. BUSCH
Began: 1-10-53 Finished: 1-13-53
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Black & buff soil
5	10	Buff clay
10	15	Brown clay
15	20	Dark brown-buff clay
20	25	Dark brown-buff clay, buff dolomite, brown-gray & buff chert 70-20-10, trace limonite, few specks marcasite
25	30	Extra coarse cuttings: Buff dolomite, gray & buff chert 80-20, few specks limonite
30	35	Coarse cuttings: Buff dolomite, gray & buff chert 60-40, some buff clay, a speck limonite
35	40	Coarse cuttings: Buff dolomite, gray, brown & buff chert 65-35, some buff clay, a speck limonite
40	45	Coarse cuttings: Buff dolomite, brown-buff clay, gray & light buff chert 45-45-10, few coarse limonite scales
45	50	Coarse cuttings: Buff dolomite, various colored chert 60-40, few coarse limonite scales
50	55	Coarse cuttings: gray & white chert, buff dolomite 95-5
55	60	Buff dolomite, buff clay & dark gray clay, gray & white chert 50-40-10
60	65	Buff dolomite, white, gray, brown & buff chert 70-30, some buff clay
65	70	Fine cuttings: Buff dolomite, white & buff chert 95-5, little buff clay.
70	75	Buff dolomite, buff, white & gray chert 60-40, little buff clay
75	80	Some extra coarse cuttings: Buff dolomite, various colored chert 80-20, a little buff clay
80	85	Fine cuttings: Buff dolomite, white, gray & buff chert 85-15
85	90	Buff dolomite, various colored chert 82-18, few specks limonite (Medium cuttings)
90	95	Coarse cuttings: Buff dolomite, gray, white & buff chert 93-7, few specks limonite

Extremely loose & broken formation. Hole was reamed to 8" diameter so that casing might be set, but could not find any firm enough to case to. Hole was advanced as far as it was possible to do so. Permission to stop the hole was granted by the geologist.

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: 520' North & 340' East from Southwest corner of Southeast ¼ of Southwest ¼ in Section 31.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 11 (DMSA)

y Name: CLARENCE J. BUSCH
1-14-53 Finished: 1-16-53
Owner: Swalby
l Runner: D. Taylor

123
869

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Dark buffish-brown clay
10	15	Dark red-brown clay
15	20	Coarse Cuttings: Buff dolomite, brown, tan & dark buff chert 85-15, few specks limonite
20	25	Extra coarse cuttings: Buff dolomite, brown, tan & dark buff chert, red-brown clay 50-45-5
25	30	Coarse cuttings: Buff dolomite, brown, tan & dark buff chert & gray chert 80-20
30	35	Coarse cuttings: Buff dolomite, gray & tan chert 85-15
35	40	Coarse cuttings: & few Extra coarse cuttings: Buff dolomite, brown, gray & dark buff chert 65-35
40	45	Coarse cuttings: Buff dolomite, dark buffish-brown clay, brown, gray & dark buff chert 60-20-20
45	50	Coarse cuttings: Buff dolomite, brown & gray chert 90-10
50	60	Coarse cuttings: Buff dolomite, brown & gray chert 92-8
60	70	Coarse cuttings: Dark buff limonite-speckled dolomite, gray & tan chert 99-1
70	75	Coarse cuttings: Dark buff limonite-speckled dolomite, gray-brown chert 99-1
75	80	Coarse cuttings: Dark buff limonite-speckled dolomite, brown, buff & tan chert 92-8
80	85	Coarse cuttings: Buff & gray-buff limonite-speckled dolomite, brown & tan chert 88-12
85	90	Coarse cuttings: Buff & gray-buff limonite-speckled dolomite, brown & tan chert 90-10
90	95	Coarse cuttings: Buff & gray-buff dolomite, brown & tan chert 95-5
95	100	Coarse cuttings: Buff & gray-buff dolomite, tan & gray-brown chert 96-4 GRAY - 103?
100	105	Coarse & Extra Coarse Cuttings: Buff & gray-buff dolomite, brown, ta & buff chert 95-5
105	110	Medium Cuttings: Buff & gray-buff dolomite, tan, brown & buff chert 96-4
110	115	Medium & Coarse Cuttings: Gray-buff dolomite, brown & tan chert 95-5, trace limonite
115	117½	Medium Cuttings: Gray-buff limonite-speckled dolomite, brown, tan & buff chert 96-4, few specks limonite
117½	120	Dark buff dark-speckled dolomite, buff clay 60-40, trace chert, few fossils BLUE - 117½ ?
120	122½	Dark buff dolomite, buff clay 80-20, trace chert, few fossils
122½	125	Dark brown shaly limestone, brown clay, dark buff dolomite 60-20-20, trace marcasite OIL - 123
125	127½	Green clay, dark buff dolomitic ravellings, few fossils, trace gray shale CLAY - 125

(Continued on next page)

Geologist: Harold W. Davis

Hole No. 11 (DRAA)
Continued

Page 2

Property Name: CLARENCE J. BUSCH

From	To	
		GLASS - 129
127½	130	Green clay & gray shale, dark brown dolomite 60-40, buff dolomitic ravellings 10, trace chocolate brown shale
130	132½	Buff dolomitic ravellings, Extra Coarse Cuttings: Gray dolomitic limestone 90-8 McGREGOR - 130

Total depth measured 132.5' with steel tape.
Water at 62'

Driller's remarks:

Loose ground 17 to 60
Hole was awful soft from 60-130½
Hard formation 130½-132½

8" hole from collar to 65 feet.

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: 1000' North & 800' East from Southwest corner of Southeast ¼ of Southwest ¼ in Section 31.

Geologist: Harold A. Davis

DRILL RECORD
The Mackle-Hillmer Company

HOLE NO. 1

Property Name: FRED EHIM
Began: 10-22-52 Finished: 10-24-52
Drill Owner: Swalley Sabeke
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Sticky dark buff clay, some brown chert
10	15	Sticky dark buff clay, buff dolomite, brown & tan chert 60-35-5, few specks marcasite
15	20	Buff dolomite, tan & gray-brown chert 92-8, trace limonite
20	25	Buff dolomite, tan & gray-brown chert 93-7, trace limonite (fairly coarse cuttings)
25	30	Coarse cuttings: buff dolomite, buff dolomite with dark brown specks (coarse grained) 80-20, tan chert 1
30	35	Buff dolomite with dark brown shale, trace tan chert, trace limonite, few specks calcite
35	40	Brown dolomite, tan & gray-brown chert 92-8, buff dolomite with dark brown specks 5, trace calcite, marcasite 2/10
40	45	Brown dolomitic limestone, tan chert 97-3, marcasite 1/10
45	55	Brown dolomitic limestone & tan limestone, trace brown chert, trace marcasite
55	60	Brown-gray dolomite, few specks marcasite, few specks calcite GRAY - 55
60	65	Brown-gray dolomite, trace marcasite, specks calcite
65	70	Dark gray dark-speckled dolomite, brown-gray dolomite 80-20, trace marcasite. BLUE - 65
70	72½	Dark gray dark-speckled dolomite, few specks marcasite
72½	75	Dark gray dark-speckled dolomite, specks marcasite
75	77½	Brown & tan fossiliferous limestone, gray dark-speckled dolomite 70-30, specks marcasite OIL - 75.7
77½	80	Brown & tan fossiliferous limestone, trace brown shale, few specks marcasite
80	85	Brown & tan fossiliferous limestone, trace brown shale, few specks marcasite
85	87½	Light brown limestone & brown limestone, specks marcasite
87½	90	Dark gray fossiliferous limestone, brown-gray dark-speckled limestone, green clay 60-30-10, specks marcasite CLAY - 88.2
90	92½	Bentonite, pale brown limestone 60-40, marcasite 1/10 GLASS - 91.5
92½	95	Coarse cuttings: brown & tan limestone, trace dark brown shale, few specks marcasite
95	97½	Brown & tan limestone, trace dark brown shale, specks marcasite
97½	100	Dark brown limestone & very dark brown shale 98-2, specks marcasite
100	102½	Brown limestone, gray limestone, gray dolomitic limestone, dark brown shale 60-30-9-1, marcasite 1/10 MacGREGOR - 101.5

(Continued on next page)

Property Name: FRED HEIM

From To

Total depth measured 102.6' with steel tape.
Water at 40'

Driller's remarks:

Very weak flowwater - just enough to drill with.
Formations firm all the way.

Land Description: Northeast ¼ of Southeast ¼,
Twnsp 2 North, Rng 1 East

Location of Hole: 770' East & 300' South of Northeast
corner of Southeast ¼

Geologist: K. W. Davis

DRILL R COND
The Eagle Picher Company

Property Name: FRED PRIM
Began: 10-25-52, finished 10-30-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Hole No. 2
Total Depth 146

Elev. _____

From	To	
0	5	Brown soil
5	10	Buff clay
10	15	Buff clay-tan chert 95-5
15	20	Buff clay-tan & brown chert 94-6
20	25	Coarse cuttings: Dark buff limonite/speckled dolomite-brown chert 70-30, trace buff chert, speck limonite & marcasite
25	30	Dark buff limonite/speckled dolomite-buff & gray/brown chert-brown clay 80-15-5, trace dull green shale, thin trace limonite speck marcasite
30	35	Coarse cuttings: Dark buff limonite/speckled dolomite-light brown chert 94-6, speck marcasite
35	40	Coarse cuttings: dark buff limonite/speckled dolomite-grey/brown chert 96-4, speck marcasite
40	45	Coarse cuttings: dark buff limonite/speckled dolomite-tan & brown chert 95-5, few specks galena
45	50	Coarse cuttings: buff limonite/speckled dolomite-tan & brown chert 93-7
50	55	Buff limonite/speckled dolomite-tan chert 90-10
55	60	Coarse cuttings: dark buff limonite/speckled dolomite-tan & gray/brown chert 96-4
60	65	Dark buff limonite/speckled dolomite-tan chert 92-8, limonite ½
65	70	Buff & dark buff dolomite-tan chert 98-2, limonite 3/10
70	75	Buff dolomite-dark buff limonite speckled clay & dolomite mixed-tan chert 80-17-3, limonite 2/10
75	80	Dark buffish/brown dolomitic limestone-grey/brown, tan & buff chert 70-30, trace limonite
80	85	Dark buff dolomite-tan & gray/brown chert 94-6, trace marcasite
85	90	Buffish/brown dolomitic limestone-tan & gray/brown chert 96-4, few specks marcasite
90	95	Dark buff & brown/buff dolomite-trace tan chert, trace limonite few sand grains
95	100	Dark buff dolomite-gray dolomite 80-20, trace chert ravellings, trace marcasite GRAY 99
100	102½	Buff stained gray dolomite-buff dolomite-& chert ravellings 10, trace marcasite
102½	105	Gray dolomite-buff dolomite & chert ravellings 20, few sand grains, trace marcasite, speck galena
105	107½	Brown/gray dolomite-dark buff dolomitic limestone with brown specks-brown/gray & tan chert ravellings 40-40-20, few specks marcasite
107½	110	Gray dark/speckled dolomite-trace gray clay-gray/brown & tan chert ravellings 30, dark buff dolomitic limestone with/brown specks (friable) 10, trace marcasite BLUE 109½
110	112½	Gray dark/speckled dolomite-buff dolomite & chert ravellings 50, few specks marcasite
112½	115	Gray dark/speckled dolomite-buff dolomite & chert ravellings 60, trace marcasite
115	117½	Gray dark/speckled dolomite-tan fossiliferous limestone 80-20, buff dolomite & chert ravellings 20, marcasite 1/10, speck gale OIL 117

(Continued on next page)

Property Name: FRED HEIM

Hole No. 2
(Continued)

From	To	
117½	120	Tan fossiliferous limestone-buff dolomite & chert ravellings 20, marcasite 2/10, speck galena
120	122½	Light brown limestone-few fossils, marcasite 1/10, speck galena
122½	125	Light brown fossiliferous limestone-marcasite 2/10, speck galena
125	127½	Light brown limestone (fairly coarse flaky cuttings)-brown dolomitic limestone 97-3, marcasite 1/10
127½	130	Light brown limestone & gray/brown dark/speckled limestone-trace green shale, marcasite 1/10 CLAYBRD 130
130	132½	Coarse cuttings: light gray/brown limestone & dark gray fossiliferous limestone 80-20, trace marcasite GLASS 130½
132½	135	Coarse cuttings: Brown limestone-trace fossils, marcasite 3/10
135	137½	Coarse flaky cuttings: Brown limestone-trace marcasite
137½	14[illegible]	Dark brown & tan limestone-trace marcasite
140	142	Dark brown & tan limestone (coarse flaky cuttings)-trace marcasite
142	144	Brown & tan limestone (rather coarse cuttings)-trace dark brown shale, trace marcasite MeGREGOR 144
144	146	Gray dolomitic limestone-trace brown limestone, few specks marcasite

TD= 146.0 w s t
Water at 27'
Assays: N .

Driller's remarks: Slide from 80 to 85, shot hole twice.

Geologist: Harold W. Davis

DRILL RECORD
The Le-Fletcher Company

HOLE NO. 3

Property Name: FRED HEIM
Began: 10-30-52 Finished: 11-1-52
Drill Owner: Swalley
Drill Runner: David Tayler

DEPTH From	DEPTH To	DESCRIPTION
0	5	Soil
5	10	Buff clay
10	15	Buff dolomite, buff clay, gray-brown chert 40-40-20, few specks marcasite
15	20	Coarse cuttings: Buff dolomite, gray-brown chert 95-5, few specks marcasite
20	25	Coarse cuttings: Buff limonite-speckled dolomite, gray-brown chert 94-6
25	30	Buff clay, buff dolomite (coarse cuttings), gray-brown chert 50-47-3, few specks limonite
30	35	Buff dolomite (coarse cuttings), buff clay 90-10, gray-brown chert 7
35	45	Coarse cuttings: Dark buff limonite-speckled dolomite, gray-brown & tan chert 90-10
45	55	Coarse cuttings: Buff dolomite, tan & gray-brown chert 97-3 few specks limonite
55	60	Coarse cuttings: Buff calcareous dolomite & limonite-stained dolomitic limestone, gray-brown chert 2
60	65	Dark buff limonite-stained calcareous dolomitic limestone, tan chert 4, calcite 10
65	70	Dark buff dolomite, gray-brown chert 70-30
70	80	Dark buff calcareous dolomite, gray-brown chert 88-12, calcite 8, few specks limonite
80	85	Buff dolomite, gray dolomite 75-25, some chert ravellings, calcite 20, marcasite 1 GRAY - 80?
85	87½	Dark buff dolomite, gray dolomite 90-10, calcite 10, some chert ravellings, marcasite 1
87½	90	Dark buff dolomite & chert ravellings, gray dolomite 95-5, calcite 5, marcasite 3/10
90	92½	Coarse cuttings: Buff dolomite & chert ravellings, gray clay 5, marcasite 1/10
92½	95	Dark buff dolomite & chert ravellings, gray dark-speckled dolomite 10, marcasite 1/10 BLUE - 92½
95	97½	Dark buff dolomite & chert ravellings, gray dark-speckled dolomite & gray clay 85-15, calcite 2, trace marcasite
97½	100	Dark buff dolomite & chert ravellings, trace gray dark-speckled dolomite, trace calcite, trace marcasite
100	102½	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 60-40, calcite ½, trace marcasite OIL - 100
102½	105	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 70-30, calcite 5, trace marcasite
105	110	Tan fossiliferous limestone, dark buff dolomite & chert ravellings 70-30, calcite 1, marcasite 2/10, specks blende
110	112½	Light tan fossiliferous limestone, light green clay, dark buff dolomite ravellings 80-10-10, calcite 5, marcasite 1/10

(Continued on next page)

Property Name: FRED HEIM

From	To	
		CLAY - 112
112½	115	Dark gray fossiliferous limestone & green clay, dark buff dolomitic ravellings 5, few specks phosphate 1/10
115	117½	Pale brown limestone, trace gray clay & dark gray fossiliferous limestone, calcite 10, trace marcasite
		GLASS - 115
117½	120	Pale brown limestone, marcasite 1/10
120	122½	Brown & pale brown limestone, trace dark brown clay, trace marcasite
122½	125	Pale brown limestone, light gray dolomitic limestone 60-40, some dark buff dolomitic ravellings, marcasite 1/10
		McGREGOR - 124

Total depth measured 125.5' with steel tape.
Water at 54'

Land Description: Northwest ¼ of Southeast ¼, Twnsp 2 North, Rng 1 East

Location of Hole: 1300' South & 250' East from Center of Section

Wisconsin Geologist: H. W. Davis

DRILL RECORD
The Eagle Fisher Company

Property Name: FRED FREIN Hole No. 4
Began: 11-1-52, finished 11-4-52 Total Depth 100'
Drill Owner: Swalley
Drill Runner: D. Taylor Elev._____

Water at 75'

From	To	
0	5	Dark Buff clay
5	10	Dark buff clay
10	15	Ochre clay
15	20	Ochre clay-tan & buff chert 95-5, calcite 2
20	25	Coarse Cuttings: Calcite-buff dolomite-tan chert 50-35-15, limonite 1
25	30	Coarse cuttings: Calcite-buff dolomite-tan chert 50-40-10, limonite 2
30	35	Coarse cuttings: Dark buff dolomite-tan & gray/brown chert 85-15, calcite 12, limonite ½
35	40	Coarse cuttings: Dark buff dolomite-tan & gray/brown chert 83-12, calcite 10, limonite 4
40	45	Light buff dolomite-tan chert 95-5, trace brown chert, white clay 1, calcite 1, limonite & marcasite 2/10 GRAY 45
45	50	Coarse cuttings: Gray dolomitic limestone-some chert ravellings, calcite 5, marcasite & limonite 3/10
50	52½	Gray dolomitic limestone-little buff dolomite ravellings, calcite 3, marcasite 8/10, speck blende
52½	55	Gray dolomitic limestone-marcasite 3/10, speck blende, calcite
55	57½	Coarse cuttings: Gray dolomitic limestone-trace marcasite, speck blende, calcite 1
57½	60	Coarse cuttings: Gray dolomitic limestone-trace calcite, few specks marcasite BLUE 60
60	62½	Gray dark/speckled dolomite-grey clay 4, few specks marcasite
62½	65	Coarse cuttings: Gray dark/speckled dolomite-few specks marcasite
65	67½	Coarse cuttings: Gray dark/speckled dolomite-trace marcasite
67½	70	Coarse cuttings: Gray dark/speckled dolomite-few specks marcasite OIL 70
70	72½	Coarse cuttings: Tan fossiliferous limestone-trace gray dark speckled dolomite, few specks marcasite
72½	75	Coarse cuttings: light brown fossiliferous limestone-few specks marcasite
75	77½	Light brown fossiliferous limestone-brown shale 99-1, few specks marcasite & galena
77½	80	Pale brown & brown limestone-few fossils-marcasite 1/10
80	82½	Light brown & brown limestone-trace limonite & marcasite, few specks galena
82½	85	Light gray dark/speckled limestone-trace marcasite (few coarse cuttings) CLAY 85
85	87½	Coarse cuttings: Brown/gray & light gray limestone-trace gray clay, dark gray fossiliferous limestone 20, trace marcasite
87½	90	Coarse cuttings: Light brown limestone-marcasite 1/10 GLASS 85½
90	92½	Coarse cuttings: Brown & light brown limestone-marcasite 1/10
92½	95	Coarse cuttings: Rather dark brown limestone, calcite ½, marcasite 2/10 McGREGOR 97½
95	97½	Brown & tan limestone-marcasite 1/10, speck blende
97½	100	Gray dolomitic limestone-trace marcasite

Land Description: NE/SE 2N, 1E
Location: 1110' E. From DH #3.
TDW 101.0' w e t

No Assays
Nothing particular on driller's log.

Wisconsin Geologist: H. W. Davis

DRILL RECORD Hole No. 5 (DETA)
The Maple-Richer Company

Property Name: FREDERICK
Began: 11-4-52 Finished: 11-7-52
Drill Owner: Swalley Est.
Drill Runner: Dave Taylor

Total Depth 97½'
Struck water 41'

Elevation 979.76'

DEPTH From	To	
0	5	Brown clay
5	10	Dense brown/buff dolomite and coarse grained buff dolomite, trace gray chert, red brown clay 20, trace limonite
10	15	CRS CUTS: Brown buff dolomite and coarse grained buff dolomite, trace tan chert, few specks limonite
15	20	CRS CUTS: Buff limonite speckled dolomite and dense brown/buff dolomite, tan chert 1
20	25	CRS CUTS: Pale buff dense dolomite and coarse grained buff dolomite
25	30	Pale buff dense dolomite, trace light gray/brown chert
30	40	Pale buff dense dolomite-tan chert 95-5, thin trace marcasite
40	45	Light tan dolomitic limestone, few specks marcasite
45	50	Gray dolomitic limestone, trace marcasite GRAY - 45
50	52½	Gray dolomitic limestone, specks green shale, speck marcasite
52½	55	Gray dolomitic limestone, trace green shale, few specks marcasite
555	57½	Light brown/gray dolomitic limestone (CRS CUTS) few specks marcasite
57½	60	Light brown/ gray dolomitic limestone, some fossils, specks marcasite BLUE - 50
60	62½	Gray dark speckled dolomite, trace green shale, few specks marcasite
62½	65	Gray dark speckled dolomite (CRS CUTS) thin trace marcasite
65½	67½	Gray dark speckled dolomite, few fossils, thin trace marcasite
67½	70	Dark gray fossiliferous folomite (CRS CUTS) trace gray clay, green shale 2, few specks marcasite OIL - 70
70	72½	Brown fossiliferous limestone, few specks marcasite
72½	75	Brown fossiliferous limestone-dark brown shaly limestone 99-1, speck marcasite
75	77½	Brown fossiliferous limestone-dark brown shaly limestone 96-4, trace marcasite
77½	80	Brown fossiliferous limestone-dark brown shaly limestone 96-4, trace marcasite
80	82½	Brown and gray/brown fossiliferous limestone, thin trace marcasite CLAY - 83
82½	85	Dark gray fossiliferous limestone- light gray clay-gray/brown limestone-green shale 65-13-20-2, trace marcasite
85	87½	Pale brown limestone-light gray clay 90-10, trace dark gray fossiliferous limestone, trace marcasite CLAY - 86
87½	90	Brown and tan limestone, trace dark brown shale, trace marcasite
90	92½	Brown and tan limestone, few specks dark brown shale, few specks marcasite, FEW SPECKS BLUE
92½	95	Dark brown limestone-black shaly limestone 99-1, thin trace marcasite, SPECK BLUE
95	97½	Brown limestone-limonite stained shaly clay-gray dolomitic limestone-black shaly limestone 70-23-5-2, some fossils, speck marcasite McGRYCOR - 97.4

TOW 98.0' w s t

Land Description: NW/SE - 2N, 1E
Location of Hole: 900' E. from DH #4

WISCONSIN Geologist: N. W. Davis

DRILL RECORD Hole No. 6 (DMRA)
The Eagle-Picher Company

Property Name: FRED HEIN Total Depth 110'
Began: 11-7-52 Finished: 11-11-52 Struck water 63'
Drill Owner: Swalley Est.
Drill Runner: Dave Taylor Elevation 929.57'

DEPTH From	To	
0	5	Brown clay
5	10	Red/brown clay, trace chert
10	15	CRS CUTS: Buff dolomite-red brown clay 1, speck marcasite, few specks chert
15	20	CRS & EXTRA CRS CUTS: Buff dolomite-red/brown chert clay 80-20, gray/brown chert 3
20	25	CRS CUTS: Buff dolomite-red/brown clay-gray/brown chert 50-35-15
25	35	Buff dolomite-gray/brown chert 88-12, trace limonite
35	40	Buff dolomite-gray/brown chert 98-2, calcite 4, trace limonite
40	45	Buff dolomite-tan and gray/brown chert 95-5, calcite 2, trace limonite
45	50	CRS CUTS: Brown/buff dolomite-tan and gray/brown chert 85-15, calcite 4, trace limonite
50	55	Buff dolomite-tan and brown chert 96-4, calcite 2, trace limonite
55	60	Brown dolomite-gray dolomite 90-10 (CRS CUTS) trace calcite, marcasite 1/10 GRAY - 59½
60	65	Gray dolomite-brown/buff dolomite 70-30, calcite 1, trace marcasite
65	70	Brown/gray dolomite-buff dolomite ravellings 10, few specks marcasite
70	72½	Gray/brown dolomite, calcite 2, few specks marcasite and limonite
72½	75	Gray dark speckled dolomite-gray/brown dolomite 80-20, trace fossils, some buff clay and chert ravellings, thin trace limonite and marcasite, trace gray clay, calcite 2 BLUE - 73
75	77½	Gray dark speckled dolomite, calcite 1, few specks marcasite, some buff dolomite and chert ravellings
77½	80	Gray dark speckled dolomite, calcite 1, few fossils, some buff dolomite and chert ravellings, few specks marcasite
80	82½	Gray dark speckled dolomite-green shale 2, gray clay 1, speck marcasite OIL-82½
82½	85	Tan dna brown fossiliferous limestone, few specks marcasite, A SPECK BLEND
85	90	Tan and brown fossiliferous limestone-dark brown shaly limestone 95-5, trace marcasite
90	92½	Brown and tan limestone-dark brown shaly limestone 92-8, few fossils, few specks marcasite
92½	95	Brown and tan limestone-light gray dark speckled limestone 80-20, few specks marcasite
95	97½	Pale brown limestone-dark gray fossiliferous limestone 60-40, trace green shale, trace marcasite GRAY - 95 GRASS - 96
97½	100	Brown and tan limestone, trace calcite, trace marcasite
100	102½	Brown dolomitic limestone and tan limestone with brown dolomite speckled, trace calcite, trace marcasite
102½	105	Rather dark brown limestone and tan limestone, trace dark brown shale, trace marcasite, few specks calcite
105	107½	Dark brown limestone and tan limestone-dark brown shaly limestone 98-2, few specks marcasite

(Continued on next page)

Property Name: FRED HEIM

Hole No. 6
(Continued)

From To

107½ 110 Gray dolomitic limestone-brown limestone-dark brown shale
90-9-1, trace marcasite McGREGOR - 107.8

TDM 110.0' w x t

Land Description: SE/SE - 2N, 1E
Location of Hole: 300' N. and 800' W. from SE corner of SE¼ in Sec. 29

Geologist: F. W. Davis

DRILL LOG
The Eagle-Picher Company

Hole No. 7 (OWS)

Property Name: [illegible]
Began: 11-11-52 Finished: 11-13-52
Drill Power: Swalley Est.
Drill Owner: S. Taylor

Total Depth 92.7'
Struck water 39'

Elevation 993.60'

From	To	
0	5	Soil
5	10	Brown and red clay
10	15	Dark buff dolomite-buff clay-buff and gray/brown chert 60-35-5
15	20	Dark buff dolomite-gray/brown chert 92-8, trace limonite, trace calcite
20	25	Dark buff dolomite-gray brown chert 95-5, trace limonite, calcite 1 (CHT CHTS)
25	30	Dark buff dolomite-tan and gray brown chert 90-10, few specks limonite (CHT CHTS)
30	35	Red clay-dark buff dolomite (CHT CHTS)-gray/brown chert 50-40-10, trace limonite, few coarse pieces of calcite
35	40	Limonite stained clay- gray/brown chert (CHTS)80-20, limonite 5, few coarse pieces calcite
40	45	Dark limonite stained dolomite-gray/brown chert 70-30, limonite 8, calcite 2
45	50	Dark limonite stained dolomite-gray/brown chert 75-25, limonite 10, calcite 3
50	55	Dark brown and tan chert-dark buff dolomite 90-10, marcasite 10, limonite 4, calcite 7 GRAY - 55'
55	60	Gray dolomite-brown, tan and buff chert ravellings 10, marcasite and limonite 5, [illegible], calcite 1
60	62½	Chert ravellings-gray dolomite 70-30, marcasite and limonite 8, calcite 5, [illegible]
62½	65	Chert ravel ings-limonite stained dolomite 90-10, marcasite and limonite 10, calcite 5, [illegible]
65	67½	[illegible]: Chert ravellings-marcasite and limonite 6, calcite 2
67½	70	Chert ravellings-limonite stained clay 95-5, limonite and marcasite 7, calcite 1 [illegible]-70
70	72½	Chert ravellings (CHTS)-limonite-marcasite 95-4-1, calcite 5
72½	75	[illegible]: Chert ravellings-limonite stained dolomite 90-1 , trace gray clay, limonite and marcasite 4, calcite 2
75	77½	[illegible]: Chert ravellings-trace gray dark speckled dolomite-limonite and marcasite 3, calcite 1
77½	80	Tan fossiliferous limestone-little chert ravellings, marcasite and limonite 5, calcite 4, [illegible] - 77½'
80	82½	Tan fossiliferous limestone-considerable ravellings from overlying beds-marcasite and limonite 8, [illegible] 1/2 (?)
82½	85	Tan fossiliferous limestone-little ravellings from overlying beds-marcasite and limonite 6, [illegible] 2/10
85	87½	Green clay-some ravellings from overlying beds, trace phosphate, marcasite 2/ [illegible] GRAY - 85 [illegible] - 87½
87½	90	[illegible]: Brown limestone, marcasite and limonite 1
90	92½	Gray dolomitic limestone-chert ravellings 15, limonite ravellings 15, marcasite 2 No [illegible] 90

TD 92.7' w s t

Drillers remarks: Broken ground 30 to 77½
Impossible to pick beds

Land Description: [illegible] - 2N, 1E
Location of Hole: 300' N. and 650' E from [illegible] corner of [illegible]

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. B

Property Name: PHEL HOLM
Began: 2-23-53 Finished: 2-24-53
Drill Owner: Thomas
Drill Runner: Reavis

Elevation 995.5'

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Buff clay
10	15	Buff clay, buff dolomite, buff chert 60-38-2
15	20	Buff clay, buff dolomite, buff, brown, gray & white chert 50-45-5
20	25	Buff dolomite, reddish-brown clay, tan & brown chert 70-28-2
25	30	Buff dolomite, dark brown dolomitic limestone, reddish-brown clay 60-30-10, tan & brown chert 6
30	35	Sample missing
35	40	Reddish-brown clay, brown & dark brown dolomitic limestone 60-40, brown, tan & buff chert 8, few specks marcasite
40	45	Brown dolomite, reddish-brown clay, brown chert & tan chert 70-15-15
45	50	Brown & tan dolomitic limestone, brown chert 98-2, few specks marcasite
50	55	Reddish-brown dolomitic limestone, gray dolomite 98-2, trace brown chert, trace calcite, few specks marcasite GRAY - 52½
55	60	Dark buff dolomite, buff clay, light brown dolomitic limestone 90-8-2, few specks marcasite
60	65	Buff dolomitic limestone, gray dolomite 90-10, few specks marcasite & calcite
65	67½	Buff dolomitic limestone, gray dark-speckled dolomite 99-1, chert ravellings 6, few specks marcasite BLUE - 67
67½	70	Buff dolomitic limestone, brown & gray clay 80 20, calcite 25
70	72½	Calcite, gray clay, buff dolomitic limestone 90-5-5, marcasite 10
72½	75	Calcite, tan fossiliferous limestone, buff dolomite 70-25-5, marcasite & limonite 20 OIL - 74½
75	77½	Tan fossiliferous limestone, marcasite & limonite 18, calcite 15
77½	80	Brown limestone, calcite 10, marcasite & limonite 22
80	82½	Brown fossiliferous limestone, calcite 10, marcasite & limonite 16
82½	85	Light brown limestone, calcite 3, marcasite & limonite 3
85	87½	Light brown limestone, calcite 5, trace gray clay, marcasite 25
87½	90	Gray clay, light brown limestone 80-20, few specks phosphate, calcite 5, marcasite 10 GRAY - 88
90	92½	Gray clay, brown dolomite 90-10, dark buff dolomite & brown chert ravellings, marcasite 8 GLASS - 92½
92½	95	Brown clay & shale, few specks brown dolomite, marcasite 9, calcite 3

(Continued on next page)

Property Name: FRED HALM

From To

95 97½ Brown limestone, dark buff dolomitic ravellings 5, marcasite 12, calcite 3 McGH30OR - 97.7

97½ 100 Gray dolomitic limestone, brown limestone 90-10, calcite 5 marcasite 4

Total depth measured 100.5 with steel tape, Water 41½

Land Description: Southwest ¼ of Southeast ¼

Location of Hole: 75' West from Drill Hole #7

ASSAYS

	ZnS	FeS2	PbS.
70-72½	0.30	8.60	Nil
72½-75	0.25	32.00	"
75-77½	0.30	26.70	"
77½-80	0.20	35.70	"
80-82½	0.20	28.60	"
82½-85	0.30	20.90	"
85-87½	0.55	8.60	"
87½-90	0.30	19.80	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 9

Property Name: FRED HELM
Began: 2-26-53 Finished: 2-27-53
Drill Owner: Thomas & Reavis
Drill Runner: Ray Reavis

Approx. Collar 1004.2'

DEPTH From	To	DESCRIPTION
0	5	Black soil & red & brown clay
5	15	Burnt orange clay
15	25	Burnt orange clay, few specks chert
25	30	Dark buff limonite-speckled dolomite, buff clay, gray-brown & tan chert 70-20-10, few specks marcasite
30	35	Buff dolomite, tan chert 99-1 (sample quite muddy)
35	40	Buff dolomite, tan chert 96-4, buff & brown clay 3, specks marcasite
40	45	Buff dolomite, tan chert 95-5, buff & brown clay 5, few coarse pieces limonite
45	50	Coarse cuttings: Dark buff limonite-speckled dolomite, tan gray-brown & buff chert 82-18, calcite 2, limonite 10
50	55	Coarse cuttings: Dark buff dolomite, tan & gray-brown chert 85-15, burnt orange clay 5, calcite 4, limonite 2
55	60	Gray-brown & tan chert, dark buff dolomite 80-20, calcite 5, limonite & marcasite 8
60	65	Gray dolomite, chert ravellings 60-40, limonite (coarse) 6, calcite 3, marcasite 1 GRAY - 60
65	70	Coarse cuttings: Gray dolomite, chert ravellings 10, limonite 5, marcasite 1, calcite 1
70	72½	Gray dolomite, chert ravellings 8, calcite 4, marcasite 1, limonite ½
72½	75	Gray dolomite, chert ravellings 4, calcite 4, marcasite & limonite 2
75	77½	Gray dark-speckled dolomite, gray clay 85-15, calcite 1, marcasite 1 BLUE - 75
77½	80	Gray dolomitic ravellings, gray dark-speckled dolomite, gray clay 60-30-10, some chert ravellings, marcasite ½, trace calcite
80	82½	Gray dark-speckled dolomite, considerable ravellings of chert & "Gray" formation & a little buff dolomite, marcasite 2
82½	85	Tan fossiliferous limestone, gray dark-speckled dolomite 80-20, some ravellings from overlying bed, marcasite 1 OIL - 83
85	87½	Tan fossiliferous limestone, some ravellings of overlying beds, marcasite 1½
87½	90	Tan fossiliferous limestone, marcasite 2½
90	92½	Tan limestone, marcasite 2
92½	95	Green clay, tan & gray-brown limestone 80-20, marcasite 3/10, few specks phosphate
95	97½	Brown dolomitic limestone, some chert ravellings, marcasite 12 CLAY - 95
97½	100	Brown dolomitic limestone, some chert ravellings, marcasite 6 GLASS - 95

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Geologist: Harold W. Lewis

HOLE NO. 9
Continued

Property Name: FRED HELM

From	To	
100	102½	Gray dolomitic limestone, some chert ravellings, marcasite 3/10 McGREGOR - 100
102½	105	Gray dolomite limestone, marcasite 1/10
105	107½	Gray dolomitic limestone, marcasite 1/10

Total depth measured 108.4' with steel tape.
Water 50½'

Land Description: Southwest ¼ of Southeast ¼

Location of Hole: 100' East from Drill Hole #7

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: FRED W. & J. FRANK WILKINSON
Began: 9-22-52 Finished: 9-23-52
Drill Owner: Swalley Estate
Drill Runner: D. D. Taylor

DEPTH From	To	DESCRIPTION
0	10	Dark brown clay
10	20	Dark ochre clay
20	25	Dark buff clay, brown chert 5, trace buff dolomite
25	30	Buff dolomite, brown & tan chert 92-8, trace limonite
30	40	Buff dolomite, brown & tan chert 96-4, trace limonite
40	50	Buff dolomite, gray chert 91-9, galena 1/10, trace limonite
50	60	Buff dolomite, tan chert 93-7, limonite 4/10, few specks galena
60	65	Buff dolomite, tan chert 80-20, limonite 5/10
65	70	Buff dolomite, gray-brown chert 93-7, limonite 2/10
70	75	Buff dolomite, trace chert, limonite 1/10
75	80	Gray-buff dolomite, trace calcite, trace limonite GRAY - 75
80	85	Gray-buff dolomite, trace calcite, trace limonite
85	90	Gray-buff dolomite, gray dark-speckled dolomite 60-40, trace limonite & marcasite
90	92½	Buff dolomite, limonite stained clay, gray dark-speckled dolomite 95-3-2, specks marcasite BLUE - 90
92½	95	Buff dolomite, gray dark-speckled dolomite, limonite-stained clay 85-10-5, trace marcasite
95	97½	Brown dolomitic limestone, dark brown shaly limestone 60-40, marcasite 4 OIL - 95
97½	100	Brown fossiliferous dolomitic limestone, brown shale 95-5, marcasite 3, blende 1
100	102½	Gray clay, brown dolomite, limestone 80-20, marcasite 2, blende 8/10 CLAY - 100.5
102½	105	Brown dolomitic limestone, dark brown shaly limestone 50-50, marcasite 7, blende 1½, trace galena GLASS - 102.5
105	107½	Dark brown shaly limestone, marcasite 1, few coarse pieces blende & galena (extra coarse)
107½	110	Coarse cuttings: Dark brown shaly limestone, light gray punky dolomitic limestone 60-40, marcasite 5/10, trace blende & galena McGREGOR - 109
110	112½	Coarse cuttings: Light gray punky dolomitic limestone, dark brown shaly limestone 80-20, marcasite 2/10, trace blende & galena
112½	115	Coarse cuttings: Light gray punky dolomitic limestone, dark brown shaly limestone 95-5, marcasite 2/10, blende 1/10 trace galena

Total depth measured 115.0' with steel tape
Water at 52' from collar
Water well. Structure drilling
Land Description: Southeast ¼ of Southwest ¼
Location of Hole: 300' North & 135' West from Southeast corner of Southwest ¼

Property Name: WILKINSON, FRED & J. FRANK

Hole No. 1
(Continued)

ASSAY

		ZnS	FeS_2	PbS
97½	100	1.85	6.00	nil.
100	102½	3.50	7.30	"
102½	105	1.40	12.70	"

Geologist: Harold N. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: FRED W. & J. FRANK ATKINSON
Began: 2-12-53 Finished: 2-14-53
Drill Owner: Thomas
Drill Runner: Reavis

Elevation 986.95

DEPTH From	To	DESCRIPTION
0	5	Brown & dark ochre clay
5	10	Ochre clay
10	15	Buff dolomite, gray-brown chert 93-7, trace limonite
15	20	Buff dolomite, gray-brown chert 94-6, trace limonite
20	30	Light buff dolomite, pale brown chert 98-2, trace limonite
30	40	Buff dolomite & dark buff limonite-speckled dolomite 90-10, trace pale brown chert, thin trace limonite
40	50	Brown-buff dolomite, dark buff limonite-speckled dolomite, brown-buff chert 90-8-2
50	55	Buff dolomite, dark buff chert & brown chert 92-8, (coarse cuttings) few specks galena
55	60	Coarse cuttings: Buff dolomite, brown chert & dark buff chert 90-10, a few cuttings resemble zinc carbonate
60	65	Buff dolomite, buffish-brown chert, ochre clay 90-7-3, dark orange granular material of higher specific gravity than dolomite 3%
65	70	Buff dolomite, dark buff dolomite, brown chert 80-15-5, trace calcite, blende 1, dark orange granular material 3
70	75	Buff dolomite, gray dolomite 80-20, trace brown chert, blende 2
75	77½	Gray dolomite, buff dolomite, 90-10, ochre clay 1, blende 1, marcasite 2/10
77½	80	Gray dolomite, buff dolomite 60-40, blende 1, marcasite 1/10
80	82½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 20, gray clay 1, marcasite 1, blende 1
82½	85	Gray dark-speckled dolomite, buff dolomitic ravellings 95-5, marcasite 1, blende 1
85	87½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 97-3, marcasite 2, blende 7/10
87½	90	Gray dark-speckled dolomite, buff dolomite & chert ravellings 90-10, marcasite 2, blende 3/10
90	92½	Gray marcasite-speckled dolomite, brown dolomite 90-10, marcasite 7, blende 4
92½	95	Brown fossiliferous dolomitic limestone (marcasite-speckled) marcasite 5, blende 2, few specks blende
95	97½	Coarse cuttings: Brown dolomitic limestone, trace green clay, marcasite 2/10, few specks blende & galena
97½	100	Brown dolomitic limestone, green clay 80-20, dark gray fossiliferous limestone 10, marcasite 4, galena 2/10, blende 8/10 CLAY - 97½
100	102½	Brown dolomitic limestone, marcasite 2, blende 7/10, galena 3/10 GLASS - 98
102½	105	Brown dolomitic limestone, marcasite ½, blende 1/10, a speck blende

(Continued on next page

Property Name: FRED W. & J. FRANK WILKINSON

From To

105 107½ Gray dark-speckled dolomitic limestone, brown dolomitic limestone 97-3, marcasite 3/10, trace blende
McGREGOR - 105

107½ 110 Gray dark-speckled dolomitic limestone, brown dolomitic limestone ravellings 90-10, marcasite 2/10, trace blende

Total depth measured 111.0' with steel tape.
Water at 54'

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: 750' South from #6 on Fred Wilkinson

Assays

	ZnS	FeS_2	PbS	$ZnCO_3$
55 - 60	1.54	5.00	nil.	12.85
60 - 65	0.97	4.10	"	7.00
65 - 70	2.04	3.70	"	8.63
70 - 75	2.80	3.50	"	4.80
75 - 77½	1.47	2.40	"	2.40
77½ - 80	1.40	2.60	"	2.11
80 - 82½	3.81	3.70	"	0.77
82½ - 85	2.74	3.90	"	0.58
85 - 87½	1.95	3.20	"	
87½ - 90	1.25	3.20	"	
90 - 92½	7.55	15.30	"	
92½ - 95	3.40	14.60	"	
95 - 97½	1.20	5.40	"	
97½ - 100	1.30	5.80	"	
100 - 102½	1.80	9.50	"	
102½ - 105	2.05	7.10	"	

The Eagle Picher Company

Property name: [illegible] J. Frank Hickson Hole . 3

Located 5[illegible] 100' [illegible] from [illegible] 2. Drill drab, hit an opening at 25 feet. Abandoned hole.

Geologist : Harold N. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-8-53 Finished: 4-9-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Elevation 979.66

DEPTH From	To	DESCRIPTION
0	4	Black soil
4	10	Buff dolomite, gray-brown chert 85-15
10	15	Buff dolomite, gray-brown chert 90-10
15	20	Coarse cuttings: Buff dolomite, gray-brown chert 96-4, limonite imbedded in dolomite 5
20	25	Coarse cuttings: Buff dolomite, gray-brown chert 99-1, limonite imbedded in dolomite 3
25	30	Buff dolomite, gray-brown chert 97-3, limonite 2
30	40	Buff dolomite, gray-brown chert 99-1
40	50	Buff dolomite, gray-brown chert & dark brown chert 82-18, a speck galena
50	55	Buff dolomite, gray-brown chert 93-7, trace limonite, a speck galena GRAY - 58
55	60	Buff dolomite, gray dolomite (coarse cuttings) 60-40, trace gray-brown chert, few specks limonite & galena
60	62½	Gray dolomite, buff dolomitic ravellings 25, few specks limonite, marcasite & galena
62½	65	Gray dolomite, buff dolomitic ravellings 65, trace limonite, few specks marcasite & galena
65	67½	Buffish-brown dolomite, gray dolomite 90-10, few coarse cuttings of coarse grained dolomite & limonite & possibly Smithsonite, thin trace limonite, a speck galena
67½	70	Gray dolomite, buff dolomitic ravellings 30, few specks limonite, galena & marcasite
70	72½	Gray dark-speckled dolomite, buff ravellings 5, few specks marcasite & galena BLUE - 70
72½	75	Dark gray dark-speckled dolomite, buff ravellings 3, few specks marcasite & galena
75	77½	Dark gray dark-speckled dolomite, buff ravellings 5, few specks marcasite & galena OILROCK - 77.7
77½	80	Brown dolomitic limestone, dark gray dark-speckled dolomite 90-10, few specks marcasite & galena
80	82½	Brown dolomitic limestone, trace calcite, trace marcasite, few specks blende & galena
82½	85	Brown fossiliferous dolomitic limestone, dark brown shale 96-4, thin trace marcasite & galena
85	87½	Light brown dolomitic limestone, dark brown shaly limestone 94-6, trace marcasite, few specks galena
87½	90	Brown dolomitic limestone, dark brown shaly limestone 95-5, trace marcasite, a speck blende & galena
90	92½	Gray dark-speckled fossiliferous dolomitic limestone & gray clay 90-10, trace green shale, trace marcasite
92½	95	Light brown sugary dolomitic limestone, gray dark-speckled fossiliferous dolomitic limestone 80-20, trace marcasite

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 4
Continued

Property Name: FRED W. & J. FRANK WILKINSON

From	To	
95	97½	Brown & dark brown sugary dolomitic limestone, trace calcite, trace marcasite
97½	100	Brown sugary dolomitic limestone, chocolate brown shale 98-4, trace marcasite
100	102½	Gray dolomitic limestone, brown dolomitic limestone & chocolate brown shale 95-5, marcasite 1/10, specks blende
102½	105	Gray dolomitic limestone, thin trace marcasite

Total depth measured 106.0' with steel tape.
Water at 51'

Driller's remarks:

Cracky ground at 22 to 24
Loose ground 45 to 55
Caving some.

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: Substitute for #3; 3' from Drill Hole #3

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 5

Property Name: FRED A. & J. FRANK WILKINSON
Began: 4-10-53 Finished: 4-10-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Elevation 985.17

DEPTH From	To	DESCRIPTION
0	5	Dark ochre clay
5	10	Coarse cuttings: Buff dolomite, gray-brown chert 50-50, trace limonite
10	15	Buff dolomite, gray-brown chert 80-20, trace limonite
15	20	Buff dolomite, gray-brown chert 90-10, trace limonite
20	30	Buff dolomite, gray-brown chert & dark buff chert 93-7, thin trace limonite
30	40	Buff dolomite, gray-brown chert 99-1, a speck galena, thin trace limonite
40	50	Brown-buff dolomite, gray-brown chert 96-4, thin trace limonite
50	55	Buff dolomite, gray-brown chert & dark buff chert 82-18, trace limonite, specks galena
55	60	Brown-buff dolomite, gray-brown chert & brown chert 95-5, trace dark buff chert, trace limonite, a speck galena
60	65	Gray dolomite, brown-buff dolomite 60-40, marcasite 2, blende 1, specks galena GRAY - 62
65	67½	Gray dolomite, buff ravellings 5, marcasite 1, blende 7/10
67½	70	Gray dolomite, buff ravellings 5, marcasite ½, blende 3/10
70	72½	Gray dolomite, buff ravellings 5, marcasite 3/10, blende 1/10
72½	75	Gray dolomite, buff ravellings 2, marcasite 3/10, blende 2/10
75	77½	Gray dolomite, buff ravellings 3, marcasite 4/10, blende 1/10 BLUE - 77½
77½	80	Gray dark-speckled dolomite, buff ravellings 2, marcasite 2/10, trace blende
80	82½	Gray dark-speckled dolomite, buff ravellings 3, marcasite 2/10, trace blende
82½	85	Gray dark-speckled dolomite, buff ravellings 2, marcasite 1/10, trace blende
85	87½	Gray dark-speckled dolomite, brown dolomitic limestone 50-50 trace marcasite, few specks blende OIL - 86.2
87½	90	Pale brown dolomitic limestone, marcasite 1/10, a speck blende
90	95	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 95-5, marcasite 1/10, specks blende
95	97½	Gray-brown limestone, dark brown dolomitic limestone 95-5, marcasite 1/10, few specks blende & galena
97½	100	Gray dark-speckled dolomitic limestone (coarse cuttings), & gray-brown limestone 80-20, trace marcasite, few specks blende & galena CLAY - 100.0
100	102½	Coarse cuttings: Gray-brown limestone, dark gray fossiliferous limestone 80-20, trace marcasite GLASS - 100.5
102½	105	Coarse cuttings: Brown dolomitic limestone, trace calcite, marcasite 2/10, few specks blende

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 5
Continued

Page 2

Property Name: FRED W. & J. FRANK WILKINSON

From	To	
105	107½	Dark brown dolomite (sugary), calcite 1, chocolate brown shale 1, marcasite 1/10, few specks galena & blende
107½	110	Gray dolomitic limestone, dark brown dolomite 90-10, marcasite 1/10, few specks galena & blende McGREGOR - 107.8

Total depth measured 110.0' with steel tape.
Water at 55'

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: 100' South from Drill Hole #4

Assays	ZnS	FeS_2	PbS
60-65	2.10	3.70	nil.
65-67½	1.85	3.70	"

5 - 16.5

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 6

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-11-53 Finished: 4-13-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Elevation 994.96

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Brown-buff clay, buff dolomite 95-5
10	15	Coarse cuttings: Buff dolomite, gray-brown & buff chert 90-10, few specks limonite
15	20	Coarse cuttings: Dark buff dolomite, gray-brown & buff chert 82-18, trace limonite, few specks galena
20	25	Coarse cuttings: Dark buff dolomite, gray-brown 93-7, few specks limonite
25	30	Coarse cuttings: Dark buff dolomite, gray-brown chert 95-5 few specks limonite
30	40	Coarse cuttings: Dark buff dolomite, gray-brown chert 96-4 few specks limonite
40	50	Coarse cuttings: Dark buff dolomite, gray-brown chert 94-6 few specks limonite
50	60	Coarse cuttings: Dark buff dolomite, gray-brown chert 99-1 few specks limonite
60	65	Coarse cuttings: Buff dolomite, gray-brown & tan chert 92-8 few specks limonite & marcasite
65	70	Coarse cuttings: Buff dolomite, brown & tan chert 93-7, few specks limonite & marcasite
70	75	Buff dolomite, gray-brown chert 92-8, a speck marcasite
75	80	Brown-buff dolomite, gray dolomite 90-10, a speck marcasite GRAY - 79.5
80	82½	Gray dolomite, buff dolomite, 70-30, few specks marcasite
82½	85	Gray dolomite, buff dolomite 96-4, trace marcasite
85	87½	Brown-gray dolomite, marcasite 1/10
87½	90	Brown-gray dolomite, marcasite 3/10
90	92½	Gray dark-speckled dolomite, marcasite 4/10 BLUE - 90.0
92½	95	Gray dark-speckled dolomite, marcasite 5/10
95	97½	Gray dark-speckled dolomite, marcasite 5
97½	100	Gray dark-speckled dolomite & gray clay, brown dolomitic limestone 97-3, marcasite 3
100	102½	Brown fossiliferous dolomitic limestone, gray dark-speckled dolomite & gray clay (ravellings?), marcasite 1, few coarse pieces of blende & galena CILROCK - 100.0
102½	105	Brown fossiliferous dolomitic limestone, brown clay 90-10, marcasite 1, galena (coarse) 2, few coarse pieces blende, some "Blue" ravellings CLAYBED - 105.3
105	107½	Gray clay, brown dolomitic limestone 90-10, few phosphate nodules, galena 2/10, marcasite 2/10, few specks blende
107½	110	Bentonite, trace brown dolomite, few specks marcasite & galena
110	112½	Coarse cuttings: Brown dolomitic limestone, trace calcite, marcasite 1, galena 2/10, specks blende

(Continued on next page)

Geologist: Harold W. Davis

Hole No. 6
Continued

Page 2

Property Name: FRED W. & J. URANE WILKINSON

From	To	
112½	115	Gray dolomitic limestone (coarse cuttings), brown dolomitic limestone 70-30, marcasite 4/10, trace galena, few specks blende MdGRaGOR - 113.5
115	117½	Coarse cuttings: grey dolomitic limestone, marcasite 2/10, few specks blende - galena

Total depth measured 117.5 with steel tape.
Water 73'

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: South 45° East 100' from Drill Hole #2

ASSAY

	ZnS	FeS_2	PbS
102½ 105	1.50	7.30	4.84

Analyzed by: Harold Erwin

4-22-53.

75

8 | 3.75
37
66

8 | 13.1

Geologist: Harold W. Davis

DALE [illegible]
The Eagle-Picher Company

HOLE NO. 7

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-13-53 Finished: 4-14-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 999.82

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Buffish brown clay
10	15	Brown-buff clay
15	20	Dark buff clay, few specks gray-brown chert
20	25	Dark buff clay, buff dolomite, gray-brown chert 80-18-2, trace limonite
25	30	Dark buff clay, buff dolomite, gray-brown chert 80-19-1, trace limonite
30	35	Dark buff dolomite, gray-brown chert 90-10, buff clay 1, trace limonite, a speck galena
35	40	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, few specks limonite
40	50	Rather coarse: Buff dolomite, gray-brown chert 92-8, few specks limonite
50	60	Rather coarse: Buff dolomite, gray-brown chert & tan chert 82-18, trace limonite
60	70	Rather coarse: Buff dolomite, tan, gray-brown & buff chert 94-6, trace limonite
70	75	Buff dolomite, tan & brown chert 91-9, few specks limonite
75	80	Buff dolomite, tan chert 90-10, few specks limonite
80	85	Buff dolomite, tan chert 98-2, trace gray-brown cave filling & rusty clay, trace limonite
85	90	Coarse cuttings: Dark buff dolomite, tan & gray-brown chert 95-5, trace brown clay, trace limonite
90	95	Buff & dark buff dolomite, tan chert 96-4, trace limonite
95	100	Dark buff dolomite (coarse) & few extra coarse chips gray dolomite, gray-brown chert 1, trace limonite BLUE - 100?
100	102½	Dark buff dolomite, gray dark-speckled dolomite 80-20, trace gray clay, trace limonite & marcasite
102½	105	Dark buff dolomitic ravellings, gray dark-speckled dolomite 50-50, marcasite ½
105	107½	Gray clay & gray dark-speckled dolomite, dark buff dolomitic ravellings 90-10, marcasite 4/10 OIL ROCK-108?
107½	110	Coarse cuttings: Brown dolomitic limestone, gray dark-speckled dolomite 80-20, buff dolomite & chert ravellings 80%, marcasite 4/10
110	112½	Brown fossiliferous dolomitic limestone, ravellings from overlying beds 70%, marcasite 3/10, few specks blende
112½	115	Green clay, some ravellings from overlying beds CLAY - 112½ (?)
115	117½	Bentonite, (ravellings from DRAB & BLUE 40%), few phosphate nodules, marcasite 2/10, few specks blende GLASS - 117½)?)
117½	120	Dark brown dolomitic limestone, buff ravellings 20, marcasite 8/10, few specks blende

(Continued on next page)

Geologist: Harold W. Davis

HOLE No. 7
Continued

Page 2

Property Name: FRED W. & J. FRANK WILKINSON

From	To	
120	122½	Buff dolomitic ravellings 90, gray dolomitic limestone 10, some coarse chips limonite, marcasite 1/10, few specks blende McGREGOR - 121. (?)
122½	125	Buff dolomitic ravellings 60, gray dolomitic limestone 40, marcasite 3/10, specks blende

Total depth measured 124.7' with steel tape.
Water at 68

Land Description: Southeast ¼ of Southwest ¼

Location of Hole: 300' West from Drill Hole #2

Isometric Geologist: [illegible]

[illegible]
The [illegible] Oil Company

Property area: [illegible] Hole [illegible]
Date: 4-14-53, finished 4-16-53 Total depth [illegible]
Rig owner: [illegible] Elev. 41'
Driller: [illegible] Elev. [illegible]

[illegible]

[illegible] buff dolomite-tan chert [illegible]

[illegible] buff dolomite-tan chert 4-3, few specks galena
[illegible] buff dolomite-tan chert [illegible]-3, trace limonite, few specks galena
[illegible] buff dolomite-gray brown chert [illegible]-4, specks galena
[illegible] buff dolomite-gray brown chert [illegible]-, trace galena
[illegible] buff dolomite-brown chert [illegible]-3, specks galena
[illegible] buff dolomite-tan brown chert [illegible]-5, specks galena
[illegible] buff dolomite-tan to brown [illegible] chert-trace limonite, specks galena
[illegible] buff dolomite-trace limonite, specks galena
[illegible] buff dolomite-trace tan chert pebbles
[illegible] buff dolomite-gray dark brown chert [illegible]-5 [illegible] trace limonite
[illegible] dark brown dolomite-trace buff pavvil [illegible]-vacuolite 5/10
[illegible] dark brown dolomite-buff pavvil[illegible] 5, vacuolite 5/10, specks galena
[illegible] dark brown dolomite-buff pavvil[illegible] 5, [illegible] 2, vacuolite 4/10, specks galena
[illegible] dolomite [illegible] dark brown dolomite [illegible], vacuolite 1, blende 1
[illegible] fossiliferous dolomite [illegible] chert [illegible], [illegible] 5, vacuolite 1, blende [illegible]
[illegible] silver-colored crystals of blende [illegible] specks, vacuolite 1
[illegible] coarse crystalline, [illegible] dolomite [illegible]-40-20, vacuolite 1, specks crystals blende, blende 1
[illegible] brown dolomite-trace calcite, vacuolite 1, specks blende ½
[illegible] brown dolomite-calcite 1, vacuolite 1, blende 1/2
[illegible] dolomite limestone-vacuolite 5, blende 1/2
[illegible] dolomite limestone-vacuolite 5, blende 1/2

[illegible] 20.7' with steel tape

ASTM

[illegible]	[illegible]	2.35	5.20	sil.
[illegible]	[illegible]	1.15	4.50	"
[illegible]	[illegible]	1[illegible].55	6.50	"
[illegible]	[illegible]	4.70	6.72	"
[illegible]	[illegible]	2.10	6.20	"
[illegible]	[illegible]	1.35	14.20	"

[illegible] description: Northeast [illegible] of Northwest [illegible]

[illegible] of hole: 41' [illegible] from [illegible] 4.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 9

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-16-53 Finished: 4-17-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Coarse cuttings: Buff dolomite, gray-brown chert 80-20, trace limonite, few specks marcasite
10	15	Coarse cuttings: Buff dolomite, tan & gray-brown chert 88-12, few specks limonite & marcasite
15	20	Buff dolomite, tan & gray-brown chert 92-8, thin trace limonite
20	30	Buff dolomite, tan chert 97-3, thin trace limonite
30	35	Dark buff dolomite, tan & gray-brown chert 93-7, limonite 1/10
35	40	Dark buff dolomite, gray-brown chert 80-20, limonite 1/10
40	45	Dark buff dolomite, gray-brown chert 95-5, limonite 1/10
45	50	Dark buff dolomite, gay-brown chert 99-1, limonite 1/10, coarse galena 1/10 GRAY - 50
50	55	Gray-buff dolomite, gray-brown chert 99-1, limonite 1/10, galena 1/10
55	60	Gray-buff dolomite, few specks chert, trace limonite, few specks galena
60	62½	Gray-buff dolomite, few specks gray dark-speckled dolomite, limonite 1, few specks marcasite & galena BLUE - 62½
62½	65	Gray dark-speckled dolomite, buff ravellings 8, limonite 1/10, marcasite 1/10, specks galena
65	67½	Gray-buff dolomite, gray dark-speckled dolomite 90-10, limonite 1/10, marcasite 1/10, specks galena
67½	70	Gray-buff dolomite, limonite 2, marcasite 1/10, trace galena
70	72½	Brown dolomitic limestone, gray dark-speckled dolomite 60-40 little buff dolomitic ravellings, limonite ½, marcasite 1/10 trace galena OIL - 71.0
72½	75	Brown dolomitic limestone, considerable buff dolomitic ravellings, ochre clay 4, limonite 2/10, few specks marcasite & galena
75	77½	Brown fossiliferous dolomitic limestone, ochre clay 5, galena 7/10, trace marcasite
77½	80	Brown fossiliferous dolomitic limestone, brown shale 99-1, galena 5/10, trace marcasite, specks blende
80	82½	Brown-gray dark-speckled dolomitic limestone, green clay 90-10, marcasite 1, blende 2, galena 3/10, few phospate nodules CAVING 82.2
82½	85	Brown dolomitic limestone, trace green clay, marcasite ½, blende 2/10, galena 1/10 GLASS - 83
85	87½	Ravellings of buff dolomite & ochre clay, brown dolomitic limestone 98-2, few specks blende & galena (strong flow water

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 9

Property Name: FRED W. & J. FRANK ERICKSON

From	To	
87½	90	brown dolomitic limestone, buff dolomitic ravellings 10, little ochre clay, marcasite 2/10, trace galena
90	92	Dark brown dolomite, few specks gray dolomitic limestone, marcasite 2/10, few specks galena & blende

McGREGOR - 92(?)

Total depth measured with a stick is 92.1'.
Water?

Hole caving badly while drilling "Glassrock".
McGregor top is uncertain.

Location of Hole: 50' West from #8

Assays	ZnS	FeS_2	PbS
80-82½	3.85	10.70	2.42

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 10

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-17-53 Finished: 4-17-53
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown Collar Elev. 964.68

DEPTH From	To	DESCRIPTION
0	8	Soil
8	15	Coarse cuttings: Buff dolomite, gray-brown, tan & buff chert 80-20, trace galena
15	20	Coarse cuttings: Buff dolomite, tan chert 93-7, a few coarse chips galena
20	25	Buff dolomite, tan & gray-brown chert 94-6, few specks galena
25	30	Dark buff dolomite, tan & gray-brown chert 90-10, a speck galena
30	35	Dark buff dolomite, tan chert 83-17
35	40	Dark buff dolomite (coarse), tan & gray-brown chert 92-8
40	45	Dark buff dolomite, tan & gray-brown chert 97-3
45	50	Buff (few coarse cuttings), tan chert 99-1, few specks limonite
50	55	Buff dolomite, trace tan chert, few specks limonite
55	60	Buff dolomite, gray dolomite 70-30, few specks limonite & marcasite
60	62½	Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10 BLUE - 60
62½	65	Fine cuttings: Gray dark-speckled ~~dolomite~~, buff dolomitic ravellings 40, trace limonite-stained clay, marcasite 3/10
65	67½	Medium cuttings: Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10
67½	70	Light brown fossiliferous dolomitic limestone, gray clay 95-5, marcasite ½, blende 6/10 OIL - 67.5
70	72½	Light brown fossiliferous dolomitic ~~limestone~~, brown clay 92-8, marcasite 4/10, blende 3/10, galena 1/10
72½	75	Green clay CLAY - 72.5
75	77½	Coarse cuttings: Dark brown dolomite, buff dolomitic ravellings 7, marcasite 2/10, blende 2/10, few specks galena GLASS - 75.0
77½	80	Dark brown dolomite, chocolate brown ~~shale 98-2~~, buff dolomitic ravellings 8, brown-gray limestone 3, marcasite 1, blende 3/10, few specks galena
80	82½	Gray dolomitic limestone, brown limestone 85-15, marcasite ½, blende 2/10, few specks galena
82½	85	Brown-gray dolomitic limestone, marcasite 2/10, blende 1/10, few specks galena McGREGOR - 80.0

Total depth measured 85.4' with steel tape.
Water at 34'
Land Description: Southeast ¼ of Southwest ¼
Location of Hole: 60' East & 4' North from Drill Hole #8

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 11

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-20-53 Finished: 4-21-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown Elevation 973.23

DEPTH From	To	DESCRIPTION
0	5	Dark ochre clay
5	10	Ochre clay, gray-brown chert 98-2
10	15	Ochre clay, buff dolomite, gray-brown chert 90-8-2, trace limonite
15	20	Buff dolomite, ochre clay, gray-brown chert 80-12-8, trace limonite
20	25	Buff dolomite, gray-brown chert 98-2, limonite 5
25	35	Buff dolomite, light gray-brown chert 95-5, limonite 1
35	45	Buff dolomite, light gray-brown chert 92-8, limonite 1/10
45	55	Buff dolomite, brown & gray-brown chert 80-20, limonite 2/10 a speck galena
55	60	Gray dolomite, buff dolomite 90-10, trace chert, limonite & marcasite ½, trace galena GRAY - 55.5
60	62½	Coarse cuttings: gray dolomite, ~~marcasite &~~ limonite 7/10, few specks galena
62½	65	Coarse cuttings: gray dolomite, marcasite & limonite ½, a speck galena
65	67½	Gray dolomite, marcasite & limonite 2/10, a speck galena
67½	70	Gray dolomite, calcite 1, marcasite 2/10, a speck galena
70	72½	Brown-gray dolomite, gray dark-speckled dolomite 80 20, marcasite 2/10, specks blende & galena, calcite ½ BLUE - 72
72½	75	Gray dark-speckled dolomite, trace calcite, trace marcasite, specks blende & galena
75	77½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 8, marcasite & limonite 2/10, thin trace galena, few specks blende
77½	80	Gray dark-speckled dolomite, buff dolomite & chert ravellings 5, brown dolomitic limestone 1, limonite & marcasite 1/10, few specks galena OIL - 80.0
80	82½	Brown fossiliferous dolomitic limestone, trace calcite, marcasite & limonite 2/10, few specks galena
82½	85	Brown fossiliferous dolomitic limestone, dark brown shale 98 2 trace calcite, marcasite & limonite 1/10, few specks galena
85	87½	Brown dolomitic limestone, dark brown shaly limestone 94-6, marcasite & limonite 1/10, few specks galena
87½	90	Brown & dark brown dolomitic limestone, marcasite & limonite 1/10, few specks blende & galena
90	92½	Gray dark-speckled fossiliferous dolomitic limestone, brown dolomitic limestone 60-40, marcasite & limonite 1/10, few specks blende & galena CLAY - 92.5
92½	95	Pale brown dolomitic limestone, dark gray fossiliferous limestone, green shale 80-19-1, brown shale 2, trace limonite & marcasite, specks galena & blende GLASS - 93.0
95	97½	Dark brown sugary dolomite, few specks calcite, thin trace marcasite

(Continued on next page)

Geologist: Harold W. Davis

Hole No. 11
Continued

Page 2

Property Name: FRED W. & J. FRANK WILKINSON

From	To	
97½	100	Dark brown sugary dolomite, trace calcite, thin trace marcasite
100	102½	Dark brown dolomitic limestone, gray dolomitic limestone (coarse cuttings) 80-20, chocolate brown shale 1, thin trace marcasite MeORaOOR 102.0
102½	105	Gray dolomitic limestone, thin trace marcasite

Total depth measured 105.0' with steel tape.
Water at 50'

Location of Hole: 500' South from Drill Hole #8

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 12

Property Name: FRED W. & J. FRANK WILKINSON
Began: 4-21-53 Finished: 4-22-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

Elevation Collar: 968.72

DEPTH From	To	DESCRIPTION
0	5	Dark brown & ochre clay, trace chert
5	10	Dark ochre clay, chert 95-5
10	15	Buff dolomite, gray-brown, brown & dark buff chert 65-35, some dark ochre clay, trace limonite, few specks marcasite
15	20	Buff dolomite, gray-brown chert 60-40, thin trace limonite, a speck marcasite & blende
20	25	Buff dolomite (fine cuttings), dark buff clay 95-5, gray chert 2, limonite 1/10
25	30	Buff dolomite (fine cuttings), dark buff clay 95-5, gray chert 3, limonite 2/10
30	35	Buff dolomite (fine cuttings with a few coarse cuttings), dark brown & gray chert 96-4, few coarse chips limonite, fine limonite 2/10
35	40	Buff dolomite, gray chert 92-8, some dark buff clay, limonite ½ (samples very muddy from 20' to 40')
40	45	Coarse cuttings: Buffish gray-brown dolomite, gray & dark limonite-stained chert 80-20, limonite & marcasite 4/10
45	50	Brown dolomite, gray-brown & dark limonite-stained chert 95-5, trace gray dolomite, limonite & marcasite 1, few specks blende GRAY - 50
50	52½	Gray dolomite, chert ravellings 50, marcasite & limonite 8/10, few specks blende
52½	57½	Gray dolomite, buff dolomite & chert ravellings 60, marcasite & limonite 6/10
57½	60	Gray dolomite, buff dolomite & chert ravellings 85, limonite & marcasite 1
60	62½	Gray dolomite, buff dolomite & chert ravellings 4, marcasite & limonite 3/10 BLUE 62.5
62½	65	Gray dark-speckled dolomite, buff dolomite & chert ravellings 1, trace calcite, marcasite 2/10, a speck blende
65	67½	Gray dark-speckled dolomite, trace calcite, marcasite ½, few specks blende & galena
67½	70	Gray dark-speckled dolomite, trace calcite, some chert & limonite ravellings, marcasite 2, few specks blende & galena
70	72½	Gray dark-speckled dolomite, brown dolomitic limestone 80-20 marcasite ½, thin trace galena OIL - 72.0
72½	75	Brown dolomitic limestone, few cuttings brown chert, trace calcite, marcasite 6/10, few specks galena
75	80	Brown dolomitic limestone, dark brown shaly limestone 99-1, marcasite 2/10, few specks galena & blende
80	82½	Brown dolomitic limestone, dark brown shaly limestone 96-4, marcasite 1/10, few specks galena & blende
82½	85	Gray dark-speckled dolomitic limestone, dark gray fossiliferous limestone, green clay 70-20-10, marcasite 1/10, a speck blende & galena

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 12

Property Name: FRED W. & J. FRANK WILKINSON

From	To	
		CLAY - 84.3
85	87½	Gray & brown-gray dark-speckled dolomitic limestone, gray clay 80-20, marcasite 1/10, specks blende
87½	90	Dark brown sugary dolomite, trace chocolate brown shale, marcasite 1/10, specks blende GLASS - 87.5
90	92½	Dark brown sugary dolomite, chocolate brown shale 99-1, marcasite 1/10, trace galena, specks blende
92½	95	Gray dolomitic limestone, dark brown sugary dolomite 95-5, trace chocolate brown shale, marcasite 1/10, few specks galena McGRAGOR - 92.5

Total depth measured 94.0 with steel tape.
Water 37½'

Location of Hole: 150' East from Drill Hole #11

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: BESSIE WISEMAN
Began: 10-1-52 Finished: 10-2-52
Drill Owner: Swalley Estate
Drill Runner: David Taylor

DEPTH From	To	DESCRIPTION
0	5	Brown & ochre clay
5	10	Dark buff dolomite, gray-brown chert 80-20 (coarse)
10	15	Buff dolomite, gray-brown, buff & red chert 85-15, specks limonite
15	25	Coarse cuttings: Buff dolomite, tan & brown chert 90-10, trace limonite
25	30	Dark buff dolomite, tan & brown chert 92-8, trace limonite
30	40	Coarse cuttings: Dark buff dolomite, tan chert 93-7, trace limonite & marcasite
40	45	Brown dolomite (some marcasite-speckled), buff dolomite, gray-brown chert 60-30-10, marcasite 8
45	50	Brown dolomite, gray-brown & gray marcasite-speckled chert 75-25, marcasite 8
50	55	Brown dolomite, brown chert 98-2, marcasite 8
55	60	Gray dolomite, marcasite 3 GRAY - 55
60	65	Gray dolomite, buff dolomite & chert ravellings 4, marcasite 1
65	67½	Gray dolomite, buff dolomite & chert & limonite ravellings 5, marcasite ½
67½	70	Gray dolomite, buff dolomite & chert & limonite ravellings 4, marcasite 4/10
70	72½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 20, marcasite 4/10 SUNK - 70
72½	75	Gray dark-speckled dolomite, buff dolomite & chert ravellings 92-8, marcasite 5/10
75	77½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 95-5, marcasite 3/10
77½	80	Gray dark-speckled dolomite, brown dolomite 90-10, gray clay 3, marcasite 3/10 OIL - 79.7
80	82½	Brown dolomitic limestone, marcasite 3/10
82½	85	Brown dolomitic limestone, marcasite 2/10
85	87½	Brown dolomitic limestone, dark brown shaly limestone 90-10, marcasite 3/10, galena 3/10
87½	90	Pale brown dolomitic limestone, dark buff clay 90-10, marcasite ½, few specks galena
90	92½	Gray-brown dolomitic limestone, brown shale 98-2, marcasite 1, few specks blende & galena CLAY - 90?
92½	95	Gray-brown dolomitic limestone, dark gray fossiliferous limestone, brown shale 95-5-2, marcasite 2, few specks blende & galena (No green clay or shale present)
95	97½	Brown dolomitic limestone, light gray-brown dolomitic limestone 80-20, marcasite 1, thin trace blende GLASS - 95½
97½	100	Brown dolomite, marcasite 1, few specks blende

(Continued on next page)

Geologist: Harold A. Davis

Hole No. 1
Continued

Page 2

Property Name: BESSIE WISEMAN

From	To	
100	102½	Brown dolomite, dark brown shale 99-1, brown-gray dolomitic limestone 5, marcasite 8/10
102½	105	Brown dolomite, marcasite 7/10
105	107	Gray dolomitic limestone, trace brown dolomite, marcasite 4/10

McGREGOR - 105

Total depth measured 107.0 with steel tape.
Water at 22' from collar

Location of Hole: 1000' East from #1 on Vincent Finch

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: BESSIE WISSMAN
Began: 10-3-52 Finished: 10-6-52
Drill Owner: Smalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Brown gray clay
10	15	Brown & dark buff clay
15	25	Dark buff clay
25	30	Buff dolomite, gray-brown chert 70-30, trace limonite
30	40	Buff dolomite, gray-brown & tan chert 93-7, thin trace limonite
40	50	Buff dolomite, gray-brown chert 98-2, thin trace limonite
50	60	Buff dolomite, gray-brown chert 90-10, limonite 1/10
60	65	Brown-buff dolomite, gray-brown chert 99-1, trace limonite, specks galena
65	70	Buff dolomite, light brown chert 92-8, few specks galena
70	75	Coarse cuttings: brown-buff dolomite, gray-brown chert 96-4, trace galena
75	80	Brown-buff dolomite, gray-brown chert 88-12, trace marcasite, few specks galena
80	85	Brown-buff dolomite, gray-brown chert 95-5, marcasite 2/10, few specks galena
85	90	Buff dolomite, gray dolomite 95-5, dark buff & reddish brown clay 5, marcasite 2 GRAY - 89
90	95	Gray dolomite, buff dolomite (ravelling) 70-30, trace dark buff clay, marcasite 3/10
95	100	Brown-gray dolomite, some buff dolomite & chert ravellings, marcasite 2/10, specks galena
100	105	Brown-gray dolomite, gray dark-speckled dolomite 60-40, marcasite 1/10, specks galena BLUE - 103
105	107½	Gray dark-speckled dolomite, marcasite 4/10, specks galena
107½	110	Gray dark-speckled dolomite, marcasite 3/10, specks galena
110	112½	Brown dolomite limestone, gray dark-speckled dolomite 60-40, marcasite 2/10, specks galena OIL - 111
112½	115	Brown dolomitic limestone, dark brown shale 97-3, marcasite 2/10, specks galena
115	117½	Brown calcareous dolomitic limestone, dark brown shale 95-5, marcasite 1, trace blende, specks galena
117½	120	Light brown dolomitic limestone, trace calcite, dark brown shale 2, marcasite ½, trace galena, few specks blende
120	122½	Brown dolomitic limestone, dark brown shale 96-4, marcasite 4/10, few specks blende & galena
122½	125	Gray-brown dolomitic limestone, green clay 60-40, marcasite 2/10 CLAY - 124
125	127½	Bentonite, light brown dolomitic limestone 60-40, marcasite 3/10, specks galena GLASS - 126½
127½	130	Brown dolomite, marcasite ½

(Continued on next page)

Geologist: Harold A. Davis

Hole No. 2
Continued

Property Name: BESSIE WISEMAN

From	To	
130	132½	Dark brown dolomite, dark brown shale 99-1, marcasite 4/10
132½	135	Dark brown dolomite, dark brown shale 3, marcasite 4/10
135	137½	Dark brown dolomite, gray dolomitic limestone 60-40, marcasite 4/10 McGREGOR - 138½

Total depth measured 137½ feet with steel tape.
Water at 57'

Land Description: Northeast ¼ of Northeast ¼

Location of Hole: 1000' East from Drill Hole # 1

Geologist: H. A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: VINCENT PINCH
Began: 9-24-52 Finished: 9-26-52
Drill Owner: Smalley
Drill Runner: David Taylor

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Gray-brown clay
10	20	Dark buff clay (few boulders at 18')
20	25	Buff dolomite, gray-brown chert (coarse) 80-20, buff clay 10, limonite 1, x speck galena
25	30	Buff dolomite, gray-brown chert 82-18, trace limonite
30	35	Dark buff dolomite, gray-brown & tan chert 84-16, trace limonite
35	40	Coarse cuttings: dark buff dolomite, gray-brown & tan chert 75-25, limonite 2, trace galena
40	50	Coarse cuttings: dark buff dolomite, gray-brown chert 85-15, limonite 2/10, few specks galena
50	55	Coarse cuttings: dark buff dolomite, gray-brown chert 90-10, limonite 2/10
55	60	Buff dolomite, gray & tan chert 80-20, limonite 5/10, trace marcasite
60	65	Light buff & buff dolomite, white, gray, buff & brown chert 70-30, limonite 1
65	70	Light gray-buff dolomite, light tan chert 98-2, marcasite 4
70	75	Gray-brown dolomite, light gray marcasite-speckled chert 92-8, marcasite 20
75	77½	Gray-brown dolomite, gray chert 99-1, marcasite 30
77½	80	Gray-brown dolomite, gray marcasite-speckled chert 85-15, marcasite 35
80	82½	Light brown dolomite, gray marcasite-speckled chert & tan chert 70-30, marcasite 25
82½	85	Brown dolomite, gray marcasite-speckled chert & tan chert 75-25, marcasite 20
85	87½	Brown dolomite, gray & gray marcasite-speckled chert & tan chert 70-30, marcasite 20
87½	90	Light brown dolomite, gray & tan chert 90-10, marcasite 8
90	92½	Light brown-gray dolomite & buff dolomite, light gray chert 1, limonite-stained clay 2, marcasite 6
92½	95	Light brown-gray dolomite, white chert 98-2, buff dolomite & limonite ravellings, marcasite 10
95	97½	Light brown-gray dolomite, gray & white chert 94-6, limonite 2, marcasite 8
97½	100	Light brown-gray dolomite, gray dolomite 90-10, trace gray & white chert, limonite 1, marcasite 5 GRAY - 99.7
100	102½	Gray dolomite, marcasite 3
102½	105	Gray dolomite, marcasite 1½
105	110	Gray dolomite, marcasite 2
110	112½	Gray dolomite, marcasite 2
112½	115	Gray dark-speckled dolomite, gray clay 1, marcasite 2 BLUE - 112½

(Continued on next page)

Geologist: H. N. Davis

HOLE NO. 1
Continued

PAGE 2

Property Name: VINCENT PINCH

From	To	
115	117½	Light gray dark-speckled dolomite, marcasite 4
117½	120	Gray dark-speckled dolomite, gray clay 1, marcasite 6
120	122½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 10 OIL - 120½
122½	125	(Some coarse cuttings) Gray dolomite, brown shale 99-1, some fossils, marcasite 20
125	127½	Light gray fossils, dark brown shaly limestone 80-20, marcasite 25
127½	130	Gray & gray-brown dolomitic limestone, gray clay 60-40, few specks phosphate, marcasite 8 CLAY - 129
130	132½	Brown dolomitic limestone, gray clay & green shale 90-10, marcasite 15 GLASS - 131
132½	135	Brown dolomitic limestone, brown shale 99-1, some fossils, marcasite 25
135	137½	Brown dolomitic limestone, brown shale 96-4, considerable fossils, marcasite 35
137½	140	Brown dolomitic limestone, brown shale 98-2, marcasite 20
140	142½	Brown dolomitic limestone, dark brown shale 98-2, marcasite 30
142½	145	Gray dolomitic limestone, brown dolomitic limestone 95-5, trace brown shale, marcasite 10 MeOHEOH - 142½
145	146	Gray dolomitic limestone, little "Glassrock" revelling, marcasite 3

Total depth measured 146.0' with steel tape.
Water at 41' from collar

Land Description: Northeast ¼ of Northwest ¼

Location of Hole: 600' South and 150' West of Northeast corner of Northwest ¼

Property one: [illegible] Hole No. 1
(Continued)

ASSAY

		Au	WO_3	Pb
[illegible]	75	0.[illegible]5	15.30	nil.
75	77½	0.50	23.7	"
77½	[illegible]	0.75	31.1	"
[illegible]	82½	0.60	10.3	"
82½	85	0.75	19.2	"
85	87½	0.70	12.5	"
87½	90	0.70	6.[illegible]	"
90	92½	0.50	7.5	"
92½	95	0.65	15.7	"
95	97½	0.60	27.5	"
97½	100	0.50	22.[illegible]	"
100	102½	0.35	17.2	"
102½	105	0.[illegible]	16.3	"
105	107½	0.45	17.2	"
107½	140	0.30	0.7	"
140	142½	0.50	17.3	"
142½	145	0.40	1[illegible].5	"

[illegible]: Mr. [illegible] called at 9:15 o'clock October [illegible], 1950 to report the following results on D. H. 1, [illegible] case.

Signed: Norman D. Moore, Jr.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: VINCENT FINCH
Began: 9-26-52 Finished: 9-30-52
Drill Owner: Swalley
Drill Runner: D. D. Taylor

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Dark buff clay, brown chert 99-1, trace limonite
10	15	Dark buff clay, brown chert 60-40
15	20	Buff dolomite, brown & gray-brown chert 80-20, trace limonite
20	30	Buff dolomite, brown & gray-brown chert 75-25, trace limonite
30	40	Buff dolomite, gray-brown chert 90-10, limonite 1/10
30	50	Buff dolomite, brown chert 96-4, trace limonite
50	60	Buff dolomite, brown & gray-brown chert 96-4, trace limonite
60	70	Buff dolomite, tan chert 98-2, thin trace limonite
70	80	Buff dolomite, tan chert 97-3
80	90	Buff dolomite, brown-tan chert 88-12
90	95	Buff-brown dolomite, brown & gray chert 97-3, marcasite 2
95	100	Gray dolomite, trace buff dolomite, marcasite 8/10 GRAY - 95
100	105	Gray dolomite, buff dolomitic ravellings 10, marcasite 4/10
105	110	Gray dolomite, buff dolomitic ravellings 15, marcasite 2
110	112½	Gray dark-speckled dolomite, trace gray clay, marcasite 3/10 BLUE - 110
112½	115	Gray dark-speckled dolomite, trace gray clay, marcasite 4/10
115	117½	Gray dark-speckled dolomite, gray clay 1, marcasite 3/10
117½	120	Gray dark-speckled dolomite, marcasite 2/10
120	122½	Light brown fossiliferous dolomitic limestone, marcasite 5/10 OIL - 120
122½	125	Light brown dolomitic limestone, dark brown shaly limestone 95-5, marcasite 1½, few specks galena
125	127½	Brown & dark brown dolomitic limestone, marcasite 3/10, galena 1/10
127½	130	Gray-brown dolomitic limestone, green clay & shale 60-40, marcasite 6/10, trace galena CLAY - 129
130	132½	Brown-gray dark-speckled dolomitic limestone, bentonite 3, marcasite 3/10, few specks galena
132½	135	Dark brown dolomite, marcasite 3/10 GLASS - 132½
135	137½	Dark brown dolomite, black shale 97-3, marcasite 3/10
137½	140	Gray dolomitic limestone, brown dolomite 60-40, marcasite 3/10 McGREGOR - 138½

Total depth measured 140.0' with steel tape.
Water at 43' from collar

Location of Hole: 1000' West from Drill Hole #1.

Geologist: Harold H. Davis

DRILL RECORD
T. Eagle-Picher Company

HOLE NO. 3

Property Name: VINCENT PINCH
Began: 10-7-52 Finished: 10-9-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Brown clay & coarse creek gravel
10	15	Coarse creek gravel, few specks limonite & marcasite
15	20	Buff dolomite, various colored chert 50-50, limonite 2/10, trace marcasite
20	25	Brown-buff dolomite, various colored chert 60-40, trace limonite, few specks
25	30	Brown dolomite, buff, brown & red chert 90-10, trace limonite
30	35	Brown-gray dolomite, buff, brown, tan & red chert 93-7, trace calcite, trace marcasite, specks galena GRAY - 30?
35	40	Brown-gray dolomite, trace marcasite, few specks green shale
40	45	Tan fossiliferous limestone, green shale 5, trace gray dark-speckled dolomite OIL - 40
45	47½	Tan fossiliferous limestone, few specks marcasite
47½	50	Tan fossiliferous limestone, brown shaly limestone 96-4, thin trace marcasite, specks galena
50	52½	Gray-brown limestone, trace marcasite, specks galena
52½	55	Brown & dark brown limestone, few specks green shale, few specks marcasite
55	57½	Light gray fossiliferous limestone, few specks marcasite
57½	60	Gray-brown limestone, dark gray fossiliferous limestone 95-5, trace bentonite, few specks marcasite CLAY - 57½
60	62½	Brown limestone & dolomitic limestone, trace dark brown shale, few specks marcasite GLASS - 58
62½	65	Brown dolomitic limestone, marcasite 1/10
65	67½	Dark brown limestone, trace marcasite
67½	70	Brown limestone, few specks marcasite
70	72½	Gray dolomitic limestone, brown limestone 80-30, few specks marcasite McGREGOR - 70½

Total depth measured 72.5' with steel tape

Water stood at 7½ ft. from collar until hole reached McGregor formation, then it dropped to 23½ ft. from collar.

Driller left a 10' length of 8" casing in this hole.
Just a trace of "BLUE" formation detected at 40'.
OILROCK & GLASSROCK were very firm.
Land Description: Southeast 1/4 of Northeast 1/4

Location of Hole: Approximate 625 North & 385' West from Southeast corner of Northeast 1/4

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: VINCENT PINCH
Began: 10-10-52 Finished: 10-13-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Black soil, gray shale, gray-brown chert 50-35-15
10	15	Brown-buff dolomite, gray-brown chert 92-8, few specks limonite (Coarse cuttings)
15	20	Buff dolomite, gray-brown chert 98-2, specks limonite
20	25	Buff dolomite, light brown & tan chert 94-6
25	30	Buff dolomite, tan chert 90-10, brown clay (sloughing) 2, trace limonite
30	35	Dark buff dolomite, trace limonite
35	40	Dark buff dolomite, trace limonite
40	50	Dark buff dolomite, tan chert 97-3, thin trace limonite
50	55	Dark buff dolomite, tan & brown chert 80-20, few specks limonite
55	60	Buff dolomite, tan & brown chert 90-10, few specks limonite
60	65	Gray-buff dolomite, marcasite 2 GRAY - 62½
65	70	Gray dolomite, marcasite 1
70	75	Gray dolomite, marcasite 3
75	77½	Brown-gray dolomite, marcasite 8
77½	80	Gray dark-speckled dolomite, marcasite 8 BLUE - 77½
80	82½	Gray dark-speckled dolomite, marcasite 15
82½	85	Gray dark-speckled dolomite, buff dolomite 80-20, marcasite 10 OIL - 84½
85	87½	buff dolomite, marcasite 40
87½	90	Brown dolomite, marcasite 22
90	92½	Tan fossiliferous limestone, brown shale 97-3, marcasite 16
92½	95	Tan fossiliferous limestone, marcasite 14, specks galena
95	97½	Green clay & dark gray fossiliferous limestone, tan limestone 60-40, marcasite 10 CLAY - 96
97½	100	Light brown dolomitic limestone, marcasite 15
100	102½	Brown dolomitic limestone, marcasite 20
102½	105	Gray dolomitic limestone, brown dolomitic limestone 80-20, marcasite 7 McGREGOR - 103

Total 105.2 with steel tape.
Water at 18½ ft. from collar

Land Description: Southwest ¼ of Northeast ¼
Location of Hole: (Approximately 600' north & (1230' East from center of Section

(Assay on next page)

Property Name: VINCENT PINCH

Hole No. 4
(Continued)

ASSAY

		ZnS	FeS_2	PbS
80	82½	0.50	13.10	nil.
82½	85	1.05	9.50	"
85	87½	0.25	35.90	"
87½	90	0.40	23.90	"
90	92½	0.35	17.80	"
92½	95	0.25	10.80	"
95	97½	0.30	13.80	"
97½	100	0.45	17.40	"
100	102½	0.25	15.50	"
102½	105	nil.	9.50	"

Analyzed by: Harold Erwin

October 16, 1952.

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 5

Property Name: VINCENT FINCH
Began: 10-13-52 Finished: 10-17-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Total Depth 155.0

Water Level 71

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Buff clay
10	15	Dark buff clay
15	20	Dark buff dolomite, gray-brown & brown chert 80-20
20	25	Buff dolomite, gray-brown chert 95-5
25	35	Buff dolomite, gray-brown chert 97-3, specks limonite (coarse cuttings)
35	40	Buff & dark buff dolomite, few specks brown chert
40	45	Buff dolomite, tan & gray-brown chert 85-15
45	50	Buff dolomite, few specks gray-brown chert
50	60	Buff dolomite, tan chert 96-4
60	70	Buff dolomite, tan chert 95-5, few specks limonite
70	80	Dark buff dolomite, tan chert 99-1, trace reddish-brown clay, limonite 1/10
80	90	Dark buff dolomite, tan chert 93-7, trace limonite
90	95	Dark buff dolomite, tan & brown chert 90-10, thin trace limonite
95	100	Dark buff limonite-speckled dolomite, brown & tan chert 80-20 few specks marcasite
100	105	Brown dolomite, trace calcite, marcasite 3/10
105	110	Brown dolomite, gray dolomite 70-30, marcasite 4, trace calcite GRAY - 108½
110	112½	Gray dolomite, buff dolomitic ravellings 1, marcasite 1½, trace calcite
112½	115	Dark gray dolomite, buff dolomitic ravellings 8, marcasite 1/10, thin trace galena, specks blende
115	117½	Brown-gray dolomite, trace calcite, buff dolomitic ravellings 5, marcasite 1/10
117½	120	Brown-gray calcareous dolomite, trace marcasite
120	122½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, marcasite 3/10 BLUE - 121
122½	125	Gray dark-speckled dolomite, buff dolomitic ravellings 10, marcasite 1/10
125	127½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 8, marcasite 1/10
127½	130	Brown fossiliferous limestone, gray dark-speckled dolomite 80-20, trace marcasite OIL - 128
130	135	Tan & brown fossiliferous limestone, few specks marcasite
135	140	Brown limestone & dark brown dolomitic limestone, some fossils, few specks marcasite
140	142½	Gray fossiliferous dolomitic limestone, green shale & clay 80-20, thin trace marcasite CLAY - 142
142½	145	Gray-brown limestone, bentonite, dark gray fossiliferous limestone 40-40-20, trace marcasite
145	147½	Dark brown dolomite, marcasite 1/10

(Continued on next page)

Geologist: H. N. Davis

HOLE NO. 5
Continued

Property Name: VINCENT PINCH

From	To	
147½	150	Dark brown dolomite, trace marcasite GLASS - 144
150	152½	Dark brown dolomite, black shale 1, marcasite 3, calcite 1
152½	155	Gray dolomite limestone, brown dolomite 80-40, marcasite 2/10, specks calcite McGREGOR - 153½

Total depth measured 156.0 with steel tape.
Water at 71' from collar

Land Description: Southwest ¼ of Northeast ¼ of Twnsp 1 North, Rng 1 East

Location of Hole: 650 North & 300 East from center of Section

Geologists: Harold W. Davis
Edwin J. Roehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: CLARENCE P. RALPH
Began: 8-5-52 Finished: 8-7-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor

Total Depth 162.5

Water Level 27'

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Buff clay & dolomite
10	20	Buff dolomite
20	25	Buff dolomite, tan chert 99-1 DRAB - 23
25	30	Buff dolomite, tan chert 97-3
30	40	Brown-buff dolomite, brown & tan chert 96-4
40	50	Brown-buff dolomite, gray & brown chert 97-3, thin trace marcasite
50	60	Pale brown dolomite, light tan chert 95-5, thin trace marcasite
60	70	Brown dolomite, thin trace marcasite
70	75	Brown dolomite, brown & light brown clay 20, thin trace marcasite
75	80	Brown dolomite, trace tan chert, few specks marcasite
80	85	Small recovery, brown dolomite, gray chert 90-10, marcasite 1/10
85	95	Brown dolomite, trace brown chert, trace marcasite
95	100	Very small recovery, brown dolomite, marcasite ½
100	105	Small recovery, brown dolomite, tan chert 99-1, marcasite 4
105	110	Brown dolomite, gray chert 98-2, marcasite 1½
110	115	Brown dolomite, brown & gray chert 99-1, marcasite ½
115	120	Brown dolomite, trace brown chert, marcasite 1
120	125	Brown dolomite, specks gray dolomite, marcasite 1½
125	130	Very small recovery, gray dolomite, marcasite 1½ GRAY-125
130	135	Brown dolomite, marcasite 2
135	140	Gray dark-speckled dolomite, marcasite 2 BLUE - 135
140	142½	Gray dark-speckled dolomite, brown dolomite 80-20, marcasite 1½
142½	145	Brown dolomite limestone, gray dark-speckled dolomite 80-20, marcasite 1 OIL - 143
145	147½	Brown & tan dolomite limestone, brown shale 20, marcasite 1½ few specks blende & galena
147½	150	Gray-brown fossiliferous dolomite limestone, gray clay 80-20, marcasite ½ CLAY - 149½
150	152½	Gray clay & green shale, trace phosphate, dark brown fossiliferous limestone 10, marcasite ½
152½	155	Light brown dolomite limestone, marcasite ½ GLASS - 152½
155	157½	Light brown dolomite limestone, marcasite 1/10
157½	160	Gray dolomite limestone, light brown dolomite limestone 60-40, marcasite 1/10 McGREGOR - ~~158½~~
160	162½	Gray dolomite limestone, pale green shale 20, marcasite 1/10 Total depth measured 163.0' with steel tape. Water at 27'

Land Description: Southeast ¼ of Sec. 6, Twnsp 1 North, Rng 1 East

Location of Hole: DMA #4

Geologists: Harold A. Davis
Edwin J. Poehlamann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: CLARENCE P. RALPH
Began: 8-8-52 Finished: 8-12-52
Drill Owner: The Smalley Estate
Drill Runner: David Taylor

Total Depth 167.5

Water Level 29

DEPTH From	To	DESCRIPTION
0	5	Soil, clay & buff dolomite
5	10	Coarse cuttings buff dolomite, limonite 2
10	20	Buff dolomite, limonite 1/10
20	25	Buff dolomite, few specks tan chert, trace limonite
25	30	Buff dolomite, brown & tan chert 94-6, limonite ½ DRAB - 24
30	40	Buff dolomite, brown & tan chert 83-17, limonite 2½
40	50	Buff dolomite, brown & tan chert 96-4, limonite 1/10
50	60	Buff dolomite, tan chert 99-1, limonite 1
60	70	Pale buff dolomite, brown & light tan chert 93-7, limonite 3
70	80	Pale tan dolomite, pale tan & gray chert 96-4, limonite 2
80	90	Pale tan dolomite, pale tan & gray chert 90-10, limonite 2, few specks marcasite
90	100	White dolomite, white chert 97-3, limonite 3, few specks marcasite
100	110	White & light brown dolomite, white & tan chert 96-4, limonite 2, trace marcasite
110	115	Brown dolomite, brown & gray chert 94-6, marcasite & limonite ½
115	120	Brown & light brown dolomite, marcasite & limonite 1
120	122½	Gray & light brown dolomite, limonite 3, trace marcasite GRAY - 120
122½	125	Gray & light brown dolomite, limonite 2½, trace marcasite
125	127½	Gray & light brown dolomite, limonite 2½, trace marcasite
127½	130	Gray & light brown dolomite, limonite 1, trace marcasite
130	132½	Gray dark-speckled dolomite, gray dolomite 60-40, trace marcasite, limonite 1/10 BLUE - 131
132½	135	Gray dark-speckled dolomite, trace marcasite
135	137½	Gray dark-speckled dolomite, trace marcasite
137½	140	Brown & tan fossiliferous dolomite limestone, gray dark-speckled dolomite 80-20, trace marcasite OIL - 138
140	142½	Brown & tan fossiliferous limestone, trace marcasite, limonite 1/10
142½	145	Brown & tan fossiliferous limestone, trace marcasite, limonite 1/10
145	147½	Brown & tan limestone, trace marcasite
147½	150	Brown & tan limestone, dark brown shale 10, trace marcasite
150	152½	Green shale & gray clay & black fossiliferous limestone, brown limestone 80-20, few specks marcasite CLAY - 150½
152½	155	Gray clay, trace brown limestone, green shale & black limestone, few specks marcasite GLASS - 155
155	157½	Light brown dolomitic limestone, few specks marcasite

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Geologists: Harold W. Davis
Edwin J. Poehlmann

HOLE NO. 2
Continued

Property Name: CLARENCE P. RALPH

From	To	
157½	160	Light brown dolomitic limestone, trace green shale & brown clay, few specks marcasite
160	162½	Light brown to dark brown dolomitic limestone, dark brown shale 5, green shale 1, few specks marcasite
162½	165	Gray dolomitic limestone, gray-brown shale 15, green shale 5, brown shale 9, few specks marcasite McGREGOR - 162½
165	167½	Gray dolomitic limestone, gray-brown shale 5, green shale 6, brown shale 1, few specks marcasite

Total depth measured measured 167.7' with steel tape.
Water at 29'

Land Description: Northeast ¼ of the Southeast ¼ of Sec. 6, Twnsp 1 North, Rng 1 East

Location of Hole: 1300' South from Drill Hole #1

Geologists: Davis & Roehlmann

Hole No. 3

DRILL LOG

The Eagle-Picher Mining & Smelting Co.

Property of: Clarence I. Walrh
Began: [illegible]-1[illegible]-[illegible] Finished: 6-1[illegible]-[illegible] Total Depth 1[illegible].3'
Drill Owner: Walley State
Drill Runner: Taylor Water at 29'

From	To	
0	5	Brown clay & soil
5	1[illegible]	Brown/buff clay & dolomite rub le[illegible]
10	1[illegible]	Brown/buff clay & some buff dolomite.
15	[illegible]	Buff dolomite, few specks limonite
25	[illegible]	Buff dolomite, thin trace limonite.
35	[illegible]	Buff dolomite, thin trace limonite.
40	[illegible]	Buff dolomite, tan chert 98-2, few specks limonite DRAW 41
45	[illegible]	Buff dolomite, brown & tan chert 96-4.
50	[illegible]	Light gray dolomite, brown chert 95-5
60	70	Light brown dolomite, brown & tan chert 97-3, thin trace limonite & marcasite.
70	[illegible]	Light brown dolomite, tan chert 98-2, trace limonite & marcasite.
80	[illegible]	Light brown dolomite, brown & tan chert 96-4, marcasite & trace limonite.
85	90	Light brown dolomite, brown chert [illegible]-12, a [illegible] buff dolomite, marcasite 1, trace limonite.
90	100	Pale brown dolomite, brown & tan chert 98-2, trace marcasite
100	110	Pale brown dolomite, tan chert 97-3, thin trace marcasite.
110	120	Light brown dolomite, gray chert 99-1, few specks gray & brown clay, few specks marcasite.
120	130	Light brown dolomite, brown & tan chert 95-5, marcasite &
130	135	Light brown dolomite, few specks chert, brown, gray & yellow clays 1, trace marcasite.
135	140	Light brown dolomite, brown, gray & yellow clays 5, thin trace marcasite
140	145	Light gray dolomite, light brown dolomite 80-20, thin trace marcasite OIL 140½
145	147½	Light gray/brown dolomite, thin trace marcasite.
147½	150	Light gray/brown dolomite, thin trace marcasite.
150	152½	Gray dark/speck dolomite, gray dolomite 80-20, trace marcasite OIL 150½
152½	155	Gray dark/speck dolomite, brown buff dolomite 60-40, trace marcasite.
155	157½	Small recovery, gray dark/speck dolomite, brown/buff dolomite 50-50, few specks marcasite. OIL 160'
157½	160	Brown/buff dolomite, gray dark speck dolomite 60-40, few specks gray clay, some fossiliferous, few specks marcasite
160	162½	Light brown fossiliferous limey dolomite, brown/buff & gray dark/speck dolomite 60, trace marcasite, broken ground
162½	165	Brown & tan fossiliferous limestone, trace brown shale, gray clay 5, thin trace marcasite.
165	167½	Brown & tan fossiliferous limestone, brown shale 10, thin trace marcasite.
167½	170	Brown & tan fossiliferous limestone, brown shale 5, thin trace marcasite

Continued 3

Property Name: Clarence P. Dolph

From	To	
170	[illegible]	[illegible] tan fossiliferous limestone, [illegible] gray fossiliferous limestone 20-20, brown shale limestone 10, few specks marcasite CLAY 172
172'	175	Light brown & tan limestone, considerable light gray dolomite, trace brown shale & fossiliferous, trace marcasite. GRAY 173'
175	177'	[illegible] tan fossiliferous limestone, considerable light gray [illegible] 1, green shale 1, trace marcasite
177'	[illegible]	[illegible] limestone, light gray dolomite 4, trace green [illegible] gray clay, trace marcasite.
1[illegible]	[illegible]	[illegible] light brown limestone, gray dolomite limestone 20-[illegible], [illegible] 1, trace marcasite [illegible]

T. [illegible] 1[illegible].[illegible] m.s.l

Water at [illegible]

Ia[illegible] Description: [illegible] / [illegible]-6 [illegible] 1 E

Location of Hole: 1000' [illegible] 3[illegible]' W from SE cor of NT/SE-6

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: CLARANCE P. RALPH — Total Depth 220
Began: 8-18-52 Finished: 8-23-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor — Water Level 59'

DEPTH From	To	DESCRIPTION
0	5	Buff clay, soil & some dolomite & chert rubble
5	10	Buff dolomite, some brown-buff clay & red chert, few specks marcasite, trace limonite
10	15	Buff dolomite, few specks limonite
15	30	Buff dolomite, few specks limonite
30	45	Buff dolomite
45	60	Buff dolomite
60	75	Buff dolomite, few specks calcite, few specks limonite
75	80	Buff dolomite
80	85	Buff dolomite, few specks limonite
85	90	Buff dolomite, brown & tan chert 97-3, few specks limonite DRAB - 85
90	95	Light brown dolomite, brown & gray chert 95-5, few specks marcasite & limonite
95	100	Light brown dolomite, brown & gray chert 94-6, few specks limonite, thin trace marcasite
100	105	Light brown & buff dolomite, brown & tan chert 99-1, few specks marcasite
105	115	Light brown dolomite, brown & tan chert 96-4, marcasite 1/10
115	125	Light brown dolomite, brown & tan chert 95-5, few specks marcasite & limonite
125	135	Light brown dolomite, brown & tan chert 98-2, trace marcasite & limonite
135	145	Light brown dolomite, trace tan chert, trace marcasite
145	155	Light brown dolomite, brown & tan chert 95-5, few specks marcasite & limonite
155	165	Light brown dolomite, tan chert 99-1, few specks marcasite - loose ground
165	175	Brown dolomite, brown & tan chert 94-6, trace marcasite
175	180	Brown dolomite, brown & gray chert 93-7, few specks marcasite
180	185	Brown dolomite, brown & gray chert 97-3, trace marcasite
185	190	Brown dolomite, some gray-brown dolomite, gray chert 1, trace marcasite GRAY - ??
190	195	Brown dolomite, trace gray-brown dolomite, trace gray chert, trace marcasite
195	200	Light brown dolomite, few specks chert, thin trace marcasite
200	205	Gray dark-speckled dolomite, thin trace marcasite BLUE - 200
205	207½	Gray dark-speckled dolomite, trace brown dolomite limestone, thin trace marcasite, few specks blende & galena
207½	210	Brown limy shale & brown clay, few fossils, trace marcasite, few specks blende & galena OIL - 207½

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Geologists: Harold W. Lewis
Edwin J. Poehlmann

HOLE NO. 4
Continued

Property Name: CLARENCE F. RALPH

From	To	
210	212½	Gray clay & some green shale, trace brown limestone, trace marcasite CLAY - 210
212½	215	Dark brown dolomitic limestone, gray clay 5, trace marcasite GLASS - 212½
215	217½	Brown & light brown limestone & dolomitic limestone, gray dolomitic limestone 80-20, trace marcasite McGREGOR - 217
217½	220	Gray dolomitic limestone, some brown dolomitic limestone, trace gray clay, marcasite ½

Total depth measured 220.6' with steel tape.
Water at 59'

Land Description: Southeast ¼ of Southeast ¼ of Sec. 6, Twnsp 1 North, Rng 1 East

Location of Hole: 500' North & 660' West from Southeast corner of Sec. 6

Geologist: H. Farrey

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 5

Property Name: CLARENCE F. RALPH
Began: 4-23-53 Finished: 4-24-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown Elevation 918.40

DEPTH From	To	DESCRIPTION
0	6	Black soil
6	10	Buff & pale buff dolomite, gray-brown clay 10, few specks limonite
10	15	Brown dolomite, buff dolomite 50-50, few specks tan & red chert, trace limonite DRAB - 12.5
15	20	Brown dolomite, tan chert 98-2, black soil (ravelling), buff dolomite (ravelling)
20	30	Light brown dolomite, tan & gray chert 94-6, black soil (ravelling), marcasite 7/10, few specks galena
30	35	Light brown dolomite, gray chert 93-7, marcasite 7/10
35	40	Gray-brown dolomite, gray chert 93-7, medium coarse cuttings dolomite & chert oxidized 50, marcasite 1/10
40	50	Gray-brown dolomite, gray chert 98-2, trace calcite, marcasite 1
50	60	Gray-brown dolomite, gray chert 98-2, trace calcite, marcasite 7/10
60	70	Gray-brown dolomite, gray chert 95-5, marcasite 1 5/10
70	80	Light brown dolomite, gray chert 98-2, marcasite 5, few specks blende
80	90	Light brown dolomite, gray chert 98-2, marcasite 9
90	100	Light brown dolomite, gray & tan chert 94-6, marcasite 4
100	105	Light brown dolomite, gray chert 99-1, marcasite 1
105	110	Gray dolomite, light brown dolomite (80-20), few specks tan chert, marcasite 3/10 GRAY - 106
110	112½	Gray dolomite, marcasite 2/10
112½	115	Gray dolomite, marcasite 2
115	117½	Gray dolomite, marcasite 1/10
117½	120	Gray dolomite, marcasite 5/10 BLUE - 120
120	122½	Dark gray speckled dolomite, trace calcite, marcasite 5/10
122½	125	Dark gray speckled dolomite, trace calcite, marcasite 1/10
125	127½	Dark gray speckled dolomite, trace calcite, marcasite trace
127½	130	Tan limestone, calcite 1/10, marcasite 1/10 OIL - 127½
130	132½	Brown & tan limestone, calcite 1/10, marcasite 1/10
132½	135	Brown & tan limestone, dark brown shale 5, trace calcite, marcasite 1/10, few specks galena
135	137½	Brown & tan dolomitic lime tone, tan limestone 10, calcite 1/10, marcasite 1/10
137½	140	Tan & gray limestone, trace calcite, marcasite 1/10
140	142½	Tan clay, brown limestone 40-60, trace marcasite CLAY - 140
142½	145	Tan limestone fossils, marcasite 1/10, medium coarse cuttings
145	147½	Tan limestone, trace marcasite, medium coarse cuttings

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Property Name: CLARENCE P. RALPH

From To

147½ 150 Tan limestone, trace marcasite, medium coarse cuttings
150 152½ Tan limestone, gray dolomitic limestone (60-40), trace marcasite, medium coarse cuttings

McGREGOR - 151½

Total depth measured 153.0

DRILLER'S REMARKS: Lost most of the cuts from 60' to 90'. The ground was loose from 70-75. The ground was ribby from 60' to 100' and soft from 100 to 130 and hard from 130-137½. Driller called Clay Bed from 140½ to 143½. There was strong water at 55' and 90'

Land Description: Northeast ¼ of Southeast ¼

Location of Hole: North 55° West 340' from Drill Hole #2

Geologist: H. V. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 6

Property Name: CLARENCE P. RALPH
Began: 7-6-'53 Finished: 7-8-'53
Drill Owner: J. F. Robinson
Drill Runner: L.J.Brown

COLLAR ELEVATION: 938.02'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	4	Soil
4	10	Buff dolomite, few specks limonite and marcasite
10	20	Buff dolomite, few specks limonite and marcasite
20	25	Brown-buff dolomite, a few specks of marcasite
25	30	Buff-brown dolomite
30	35	Buff-brown calcareous dolomite
35	40	Brown calcareous dolomite
40	45	Brown calcerous dolomite, specks of marcasite
45	50	Brown dolomite, brown & gray-brown chert 96-4, trace of marcasite DHAB - 47.5'
50	60	Brown dolomite, gray-brown chert 93-7, marcasite 4/10
60	70	Brown dolomite, gray & brown chert 91-9, marcasite 1
70	80	Brown dolomite, gray & gray-brown chert 90-10, marcasite 1½
80	85	Pale brown dolomite, light gray & white chert 70-30, marcasite 3/10
85	90	Pale brown dolomite, light gray & white chert 93-7, marcasite 4/10, speck of blende
90	100	Brown dolomite, gray chert 92-8, marcasite 1/10, speck of blende
100	110	Brown dolomite, gray-brown chert 96-4, marcasite 3/10, blende 1/10
110	120	Brown dolomite, tan chert 93-7, marcasite ½, trace of blende
120	125	Brown dolomite, few specks of chert, marcasite ½, speck of blende
125	130	Brown dolomite (some marcasite-speckled), few specks of marcasite-speckled chert, marcasite 5, a speck of blende
130	135	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 2, blende 2
135	140	Brown dolomite, tan and brown chert 92-8, marcasite 2, blende 3
140	142½	Brown dolomite, gray-brown and brown chert 93-7, marcasite 6, blende 1/2.
142½	145	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 30, blende 10
145	147½	Brown dolomite, gray marcasite-speckled chert 98-2, marcasite 15, blende 4.
147½	150	Brown dolomite, gray dolomite 80-20, marcasite 6, blende 2

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DRILL HOLE No. 6 (Con't.)

Property Name: CLARENCE P. RALPH.

DEPTH FROM	DEPTH TO	DESCRIPTION
150	152½	Gray dolomite, marcasite 5, blende 1/2. GRAY - 149.5'
152½	155	Gray dolomite, marcasite 5, blende 1
155	157½	Gray dolomite, marcasite 12, blende 2
157½	160	Gray marcasite-speckled dolomite, marcasite 22, blende 4
160	162½	Gray clay and gray dolomite, marcasite 75, blende 2 (?) BLUE - 160'
162½	165	Gray clay and dolomite, marcasite 70, trace of blende (?)
165	167½	Brown dolomitic limestone (soft), trace of gray clay, marcasite 12, blende 1/2. OIL ROCK - 165.2'
167½	170	Light tan fossiliferous limestone, dark brown shaly limestone 95-5, marcasite 5, blende 1/2, speck of galena.
170	172½	Green clay, brown-gray dark speckled limestone 80-20, marcasite 3, blende 3/10 CLAY - 171.5' (per driller)
172½	175	Dark brown limestone and dolomitic limestone, chocolate brown shale 97-3, marcasite 30, blende 2 (?)
175	177	Brown limestone, chocolate brown shale 99-1, marcasite 5, blende 1/2. GLASS - 172.5'
177	180	Gray dolomitic limestone, marcasite 8, blende 2. McGREGOR - 177.0'

T.D.H: 180.6 feet, with steel tape.
Water: 17 feet
Assays: Yes

Location of hole: North 45°, east 50 feet from Drill Hole 33 on Francis M. Calvert.

A S S A Y S

		Blende	FeS_2	Galena
130	135	3.30	6.42	0.12
135	140	5.10	7.49	0.12
140	145	1.30	7.27	0.12
142½	145	8.60	22.04	0.12
145	147½	1.35	9.41	0.12
147½	150	1.85	7.70	0.12
150	152½	0.30	10.48	0.12
152½	155	1.55	12.84	0.12
155	157½	3.85	16.69	0.12
157½	160	3.25	28.24	0.12
160	162½	1.40	58.42	0.15
162½	165	8.10	51.78	0.15
172½	175	0.85	22.68	0.15

Geologist: H. [illegible] Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

HOLE NO. 7

Property Name: Clarence P. Ralph
Began: 7-9-'53. Finished: 7-13-'53.
Drill Owner: Robinson
Drill Runner: L.J.Brown

COLLAR ELEV: 961.99'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	6	Soil
6	10	Buff clay, few coarse cuts buff dolomite.
10	15	Dark buff dolomite, few cuts red chert, trace limonite
15	45	Dark buff dolomite, few specks limonite.
45	50	Buffish-brown dolomite, few specks marcasite
50	55	Gray-brown dolomite, few specks marcasite
55	60	Gray-brown & buffish-brown dolomite, trace marcasite
60	65	Buffish-brown dolomite, marcasite 1/10
65	70	Buffish-brown dolomite, ctrace calcite, trace marcasite.
70	75	Buffish-brown dolomite, few specks calcite, trace marcasite. DRAB- 77.5'
75	80	Brown dolomite, gray-brown chert 98-2, marcasite 1/10
80	90	Brown dolomite, gray & gray-brown chert 94-6, marcasite 1.
90	100	Brown dolomite, gray and gray-brown chert 95-5, marcasite 3, few specks of galena, trace of dark brown shale.
100	110	Brown dolomite, gray chert 98-2, trace dark brown shale, marcasite 2.
110	120	Pale brown dolomite, white chert 90-10, marcasite 1.
120	130	Pale brown dolomite, light gray-brown chert 90-10, marcasite 2, a speck of blende.
130	140	Brown dolomite, gray-brown chert 94-6, marcasite 1/2
140	150	Brown dolomite, trace tan chert, marcasite 3/10.
150	160	Brown dolomite, tan chert 99-1, marcasite 4/10.
160	170	Brown dolomite, brown and tan chert 92-8, marcasite 6/10.
170	175	Small recovery. Brown dolomite, gray-brown chert 96-4, marcasite 3.
175	180	Brown dolomite, trace brown chert, marcasite 10, blende 3/10. GRAY 182'
180	182½	Brown dolomite, gray dolomite 80-20, marcasite 8, blende 2/10
182½	185	Gray dolomite, marcasite 8, blende 1/10.
185	187½	Brown-gray dolomite, marcasite 7, trace of blende
187½	190	Brown-gray dolomite, marcasite 9, blende 1/10. BLUE 192'
190	192½	Brown-gray dolomite, gray clay 80-20, marcasite 6, blende 1/10
192½	195	Dark gray dolomite, trace gray clay, marcasite 4, trace of blende. OIL - 196'
195	197½	Brown dolomitic limestone, gray clay 60-40, marcasite 1½, a speck of blende.
197½	200	Brown fossiliferous dolomitic limestone, marcasite 4, trace of blence.

(Continued on next page)

Geologist: H. W. Davis.

Property Name: Clarence P. Ralph

HOLE NO. 7 Continued

DEPTH FROM	TO	DESCRIPTION
200	202½	Light brwon and tan fossiliferous limestone, light gray clay 3, marcasite 1, few specks of blende. CLAY BED 202.4'
202½	205	Brown dolomitic limestone, light gray clay and green shale 60-40, marcasite 2, few specks of blende. GLASS - 203.5'
205	207½	Dark brown dolomitic limestone, chocolate brown shale 98-2, marcasite 1, few specks of blende.
207½	211	Gray dolomitic limestone, dark brown dolomitic limestone, 90-10, marcasite 1, trace of blende. McGREGOR 207.9'

T.D.H. 211.5'
Water: 38.5'
Assays: Yes

Location: 250 feet south from Drill hole # 6.

Assay	ZnS	FeS_2	PbS
175 - 180	0.30	7.09	none
180 - 182½	0.31	7.00	"
182½ - 185	0.22	9.67	"
185 - 187	0.21	10.83	"
187½ - 190	0.45	9.35	"

Geologist: R. W. Davis.

DRILL RECORD

THE [illegible] COMPANY

U565

DRILL HOLE NO. 8

Property Name: CLARENCE P. RALPH
Began: September 23, 1953. Finished:
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 994.84'

DEPTH		DESCRIPTION
0	5	Soil
5	30	Buff clay
30	40	Buff dolomite
40	50	Buff dolomite, a speck of limonite
50	60	Buff dolomite, few specks of limonite
60	70	Buff dolomite (coarse cuts)
70	80	Buff and dark buff dolomite, few specks limonite
80	90	Dark buff dolomite
90	100	Dark buff dolomite, few specks brown dolomite, a speck of calcite, a speck of marcasite
100	105	Dark buff dolomite, brown dolomite 50-50, trace of calcite, thin trace of marcasite
105	110	Brown dolomite, dark brown chert 95-5, marcasite 1/10 DRAY - 107.5'
110	120	Brown dolomite, gray marcasite-speckled chert and dark brown chert 88-12, marcasite 2, few specks of galena
120	130	Brown dolomite, gray and brown chert 93-7, marcasite 4, few specks of galena and a speck of blende
130	135	Brown dolomite, gray marcasite-speckled and brown chert 92-8, marcasite 9, few specks of galena
135	140	Brown dolomite, gray and tan chert 94-6, marcasite 7, few specks of galena
140	150	Pale brown dolomite, gray and white chert 92-8, marcasite 7/10, few specks of galena
150	160	Brown dolomite, brown-gray chert 93-7, marcasite 1/2, a speck of galena
160	165	Brown dolomite, tan and brown-gray chert 80-20, marcasite 4/10, a speck of blende
165	170	Brown dolomite, tan chert 94-6, marcasite 6/10, a speck of galena
170	180	Brown dolomite, tan chert 97-3, marcasite 1/2
180	185	Brown dolomite, tan chert 99-1, marcasite 3
185	190	Brown dolomite, tan chert 93-7, marcasite 20
190	195	Brown dolomite, tan and gray-brown chert 90-10, marcasite 7
195	200	Brown dolomite, tan and gray-brown chert 93-7, marcasite 5
200	205	Brown dolomite, trace of tan chert, marcasite 2
205	210	Brown dolomite, trace of tan chert, marcasite 6
210	212½	Very small recovery: Brown dolomite, speck of chert, marcasite 5
212½	215	Brown-gray dolomite, trace of gray clay, marcasite 4. GRAY - 212.5'
215	217½	Gray-brown dolomite, a speck of green shale, marcasite 1½
217½	220	Gray-brown dolomite, marcasite 2
220	222½	Gray-brown dolomite, gray coarse-grained dolomite 90-10, marcasite 2, blende 1/2 BLUE - 222.3'

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 8 CONT'D.

Property Name: CLARENCE P. RALPH.

DEPTH		DESCRIPTION
222½	225	Small recoveries: Gray-brown dolomite, gray coarse-grained dolomite 85-15, gray clay 1, marcasite 3, blende 1
225	227½	Gray coarse-grained dark-speckled dolomite, gray-brown dolomite 80-20, gray clay 3, marcasite 4, blende 2
227½	230	Brown fossiliferous dolomitic limestone, gray coarse-grained dolomite 90-10, trace of brown clay, marcasite 3, blende 3 OIL ROCK - 227.8'
230	232½	Brown fossiliferous dolomitic limestone and brown shaly limestone, marcasite 3, coarse blende 4
232½	235	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 2, blende 5 CLAY - 234'
235	237½	Coarse cuts: Dark brown dolomite, gray clay 90-10, marcasite 1, blende 1, trace of calcite GLASS - 236'
237½	240	Brown dolomite, gray dolomitic limestone (coarse cuts) 60-40, marcasite 1, blende 1 McCREOUR - 239'
240	242½	Gray dolomitic limestone, marcasite 6/10, blende 4/10

T.D.#: 242.5 feet, with steel tape
Water: 77 feet
Assays: Yes.
Location of Drill Hole: 75 feet East from # 4 on Francis M. Calvert

Drillers Remarks: Broken ground 115-125 feet; lost some cuttings
Crack at 146 feet.
Broken ground 185-205 feet; lost some cuttings
Soft ground 215-237½

Property Name: CLAYTON P. HALL

Hole No. 2
(Continued)

ASSAY

		Blende	FeS_2	Galena
220	222½	0.65	9.94	0.13
222½	225	1.45	11.12	0.13
225	227½	1.75	9.20	0.13
227½	230	3.15	0.13	0.13
230	232½	6.05	6.42	0.13
232½	235	5.75	6.20	Trace
235	237½	1.05	5.77	"
237½	240	0.95	4.99	"

Geologist: R. W. Davis

USG-9

DRILL RECORD

THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 9

Property Name: CLARENCE F. RALPH
Began: September 25,1953. Finished: September 30,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 993.18'
229.5
763½

DEPTH		DESCRIPTION
0	8	Soil
8	20	Coarse cuts: Buff dolomite
20	40	Buff dolomite
40	50	Coarse Cuts: Light buff dolomite
50	60	Coarse cuts: Buff dolomite, specks of limonite
60	65	Coarse cuts: Dark buff dolomite, galena 1, few specks of limonite
65	70	Buff dolomite, galena 1/10
70	80	Coarse cuts: Buff dolomite, few specks of galena
80	90	Coarse cuts: Buff dolomite
90	95	Brown-buff dolomite and dark buff dolomite, specks of marcasite
95	100	Buff-brown dolomite, few specks of calcite, trace of marcasite
100	105	Light tan and brown dolomite, trace of marcasite, few specks of galena DRAB - 107.5'
105	110	Brown dolomite, white, gray and brown chert 92-8, trace of marcasite, trace of galena
110	120	Pale brown dolomite, white and gray chert 93-7, marcasite 3
120	130	Pale brown dolomite and light tan dolomite, white and gray chert 97-3, marcasite 1
130	140	Pale brown dolomite, gray and white chert 94-6, marcasite 4/10
140	145	Light brown-gray dolomite, gray and white chert 95-5, marcasite 3/10
145	150	Brown dolomite, gray-brown chert 94-6, marcasite 2
150	160	Brown dolomite, gray-brown chert 95-5, marcasite 1/2
160	170	Brown dolomite, tan chert 96-4, marcasite 4/10
170	180	Brown dolomite, tan chert 98-2, marcasite 4/10
180	185	Brown dolomite, few specks of chert, marcasite 2/10
185	190	Brown dolomite, tan chert 95-5, marcasite 1/2
190	195	Small recovery: Few extra coarse cuts, Brown dolomite, tan chert 93-7, marcasite 8/10
195	200	Entire recovery consists of one 1" boulder, brown marcasite-speckled dolomite, trace of calcite.
200	205	Brown dolomite, tan and brown chert 95-5, marcasite 5
205	210	Brown dolomite, gray dolomite 80-20, marcasite 5. GRAY-209'
210	212½	Very small recovery: Brown dolomite ravellings, gray dolomite 60-40, marcasite 8
212½	215	Gray dolomite, brown dolomite ravelling 5, marcasite 3
215	217½	Brown-gray dolomite, marcasite 2
217½	220	Gray-brown dolomite, marcasite 1, specks of blende
220	222½	Gray-brown dolomite, marcasite 3, specks of blende
222½	225	Gray-brown dolomite, gray clay 80-20, marcasite 4, blende 1/2 BLUE - 224.5'
225	227½	Gray dark-speckled dolomite, brown dolomite 95-5, trace of calcite, gray clay 2, marcasite 3, blende 2/10

(CONTINUED ON NEXT PAGE)

Geologist: H. . . Davis.

DRILL HOLE NO. 9 CON'T.

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
227½	230	Gray dark-speckled dolomite, brown dolomitic limestone, gray clay, brown clay 77-18-3-2, marcasite 6, blende 1 OIL ROCK - 229.5'
230	232½	Brown fossiliferous dolomitic limestone, brown clay 90-10, mx marcasite 5, blende 3
232½	235	Green clay, dark gray fossiliferous dolomitic limestone 95-5, marcasite 2, blende 1 CLAY BED - 232.5'
235	237½	Coarse cuts: Dark brown dolomite, gray clay (bentonite)80-20, marcasite 4, clacite 1, blende 1/2
237½	240	Brown limestone, chocolate brown shale and brown clay 98-2, marcasite 5, blende 4/10
240	242	Gray dolomitic limestone, brown limestone 90-10, marcasite 1, blende 1/10 McGREGOR - 240.2'

T.D.M: 241.6 feet, with steel tape
Water: 76 feet
Assays: Yes
Location of Drill Hole: 75' east from #8.
Drillers remarks: Loose ground 193 to 222½'; soft ground 225 to 237½'

A S S A Y S

		Blende	FeS_2	Galena
222½	225	0.25	7.06	Tr.
225	227½	0.90	9.63	"
227½	230	1.15	8.98	0.92
230	232½	4.90	9.41	Tr.
232½	235	1.65	7.91	0.58
235	237½	0.60	7.27	0.11
237½	240	0.10	6.42	0.11

Geologist: R. C. Davis

DRILL RECORD

THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 10

Property Name: CLARENCE F. RALPH
Began: October 1,1953. Finished: October 5, 1953
Drill Owner: J. P. Robinson
Drill Runner: L. J. Brown COLLAR ELEVATION: 962.51'

DEPTH		DESCRIPTION
0	6	Brown soil
6	10	Coarse cuts: Buff dolomite, few specks red residual chert, few specks of limonite
10	20	Coarse cuts: Buff dolomite, trace of limonite
20	40	Coarse cuts: Buff dolomite, few specks of limonite
40	55	Buff and dark buff dolomite
55	60	Buff dolomite, brown-gray dolomite 60-40
60	65	Pale brown dolomite, buff dolomite 90-10, a speck of marcasite and calcite
65	70	Pale brown dolomite, few specks calcite, thin trace of marcasite
70	75	Brown dolomite, a speck of calcite, marcasite 1/10
75	80	Brown dolomite, gray-brown and brown chert 96-4, marcasite 2/10, few specks of dark brown shale ~~DRAB - 77.5'~~
80	85	Buffish brown dolomite, light gray chert 94-6, trace of dark brown shale, marcasite 2
85	95	Brown dolomite, gray-brown chert 92-8, marcasite 1½
95	100	Brown dolomite, gray,brown and tan chert 91-9, marcasite 1
100	110	Brown dolomite, white and gray chert 95-5, marcasite 1
110	120	Light brown-gray dolomite, gray and white chert 85-15, marcasite 1
120	130	Brown-gray dolomite, gray chert 95-5, marcasite 1/2
130	140	Brown dolomite, tan chert 95-5, trace of gray chert, marcasite 6/10, a speck of blende
140	145	Brown dolomite, tan chert 93-7, marcasite 4/10
145	155	Brown dolomite, tan and gray chert 99-1, marcasite 2/10
155	165	Brown dolomite, tan and gray-brown chert 92-8, marcasite 2, few specks of blende
165	175	Brown dolomite, tan and brown chert 93-7, marcasite 1½, a speck of blende
175	180	Brown dolomite, gray dolomite 95-5, marcasie 4, few specks of blende GRAY - 179.9'
180	182½	Gray dolomite, marcasite 3, few specks of blende
182½	185	Gray dolomite, marcasite 1, a speck of blende
185	187½	Gray dolomite, marcasite 2, a speck of blende
187½	190	Brown-gray dolomite, marcasite 1, a speck of blende
190	192½	Brown-gray dolomite, marcasite 8/10, a speck of blende
192½	195	Gray dark-speckled dolomite, trace of gray clay, marcasite 1, a speck of blende BLUE - 192.5'
195	197½	Dark gray dark-speckled dolomite, gray clay 4, marcasite 4/10, few specks of blende OIL - 198.0'
197½	200	Light brown fossiliferous limestone (soft), dark gray-speckled dolomite 80-20, marcasite 1, trace of blende
200	202½	Light brown fossiliferous limestone and brown shaly limestone, marcasite 8/10, trace of blende CLAY BED- 204'
202½	205	Brown fossiliferous limestone and shaly limestone, green clay 60-40, marcasite 7/10, trace of blende GLASS - 207'

(CONTINUED ON NEXT PAGE)

Geologist: H. L. Davis.

DRILL HOLE NO. 10 CON'T.

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
205	207½	Coarse cuts: Dark brown dolomitic limestone, green clay 90-10, marcasite 1, few specks of calcite, few specks of blende
207½	210	Coarse cuts: Gray dolomitic limestone, dark brown dolomitic limestone, chocolate brown shale 60-35-5, marcasite 2/10

McGREGOR- 208.5'

T.D.H: 210.4 feet, with steel tape
Water:
Assays: No.
Location of Hole: 75 feet East from Drill Hole # 7.

Geologist: H. [illegible] Davis

DRILL RECORD
THE [illegible]-[illegible] COMPANY

DRILL HOLE NO. 11

Property Name: CLARENCE F. RALPH
Began: October 6,1953. Finished: October 8,1953.
Drill Owner: J. F. Robinson
Drill Runner: L.J. Brown.

COLLAR ELEVATION: 939.57'

DEPTH		DESCRIPTION
0	4	Soil
4	10	Course cuts: Dark buff dolomite, specks of limonite
10	20	Buff dolomite
20	30	Buffish-brown dolomite
30	40	Brown dolomite, a speck of marcasite
40	45	Brown dolomite (slightly calcareous), specks of marcasite
45	50	Buffish-brown dolomite, few specks of calcite, few specks of marcasite DRAW- 52.5'
50	55	Brown dolomite, tan and gray-brown chert 95-5, marcasite 1/10,
55	65	Brown dolomite, gray-brown and marcasite-speckled dolomite 91-9, marcasite 6
65	75	Brown dolomite, gray-brown chert 94-6, marcasite 4
75	80	Brown dolomite, gray and gray-brown chert 96-4, marcasite 1
80	85	Pale brown-gray dolomite, light gray and white chert 80-20, marcasite 3/10
85	95	Brown dolomite, gray and brown-gray chert 93-7, marcasite 1/2
95	105	Brown dolomite, brown chert 97-3, trace of green shale, marcasite 1/2, trace of blende
105	115	Brown dolomite, gray and tan chert 98-2, green shale 5, marcasite 6/10, trace of blende
115	125	Brown dolomite, trace of tan chert, green shale 7, marcasite 5, blende 1/2
125	130	Brown dolomite, tan chert 99-1, green shale 4, marcasite 4, blende 3/10
130	135	Brown dolomite, marcasite-speckled chert and gray-brown chert 90-10, green shale 3, marcasite 18, blende 9
135	137½	Brown dolomite, marcasite-speckled chert 95-5, marcasite 55, blende 30
137½	140	Brown dolomite, tan and brown chert 93-7, marcasite 7, blende 3
140	142½	Brown dolomite, brown and tan chert 88-12, marcasite 3, blende 1
142½	145	Brown dolomite, tan and brown chert 92-8, marcasite 2, blende 7/10
145	150	Brown dolomite, trace of tan chert, marcasite 35, blende 20
150	152½	Gray dolomite, marcasite 25, blende 8 GRAY- 150'
152½	155	Gray dolomite, marcasite 40, blende 15
155	157½	Gray dolomite, marcasite 25, blende 12
157½	160	Gray dolomite, marcasite 40, blende 15
160	162½	Gray dolomite, marcasite 25, blende 10
162½	165	Gray dolomite, marcasite 45, blende 5
165	167½	Gray dolomite, marcasite 30, blende 20
167½	170	Gray marcasite-speckled dolomite, marcasite 50, blende 10
170	172½	Gray marcasite-speckled dolomite, trace of gray clay, marcasite 25, blende 5 OIL ROCK- 172.5'
172½	175	Brown fossiliferous dolomitic limestone and brown shaly limestone, green clay 80-20, marcasite 15, blende 5 CLAY- 174.5'
175	177½	Dark browndolomitic limestone, green clay, cream colored chert 85-10-5, marcasite 20, blende 3 GLASS- 176.' (?)

(CONTINUED ON NEXT PAGE)

Geologist: H. V. Davis.

DRILL HOLE NO. 11 CON'T.

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
177½	180	Dark brown dolomitic limestone and limestone, gray dolomitic limestone, chocolate brown shale 92-5-8, marcasite 10, blende 3
		McGREGOR- 179.9'
180	182	Gray dolomitic limestone, marcasite 9, blende 4

T.D.H: 183.0 feet with steel tape
Water: 18 feet
Assays: Yes
Location: 50 feet East of # 6.

REMARKS: I am sure that the mineralization in the last few cuts is ravellings from higher up in the hole. The McGregor was quite firm.

H.V.Davis.

DRILLER'S REMARKS:
loose ground 135- 137½
Broken ground 137½ - 165
Soft ground 167½ - 180
Firm 180 - 182

130 - 175 - 10.93 ZnS.

ASSAY

		BLENDE	FeSe	GALENA
130	135	7.00	15.40	0.13
135	137½	22.30	42.80	0.27
137½	140	2.00	7.27	0.12
140	142½	0.30	5.13	Trace
142½	145	0.35	2.56	Trace
145	150	11.15	35.31	0.12
150	152½	2.60	24.61	0.12
152½	155	9.55	28.03	0.12
155	157½	11.85	23.96	0.12
157½	160	5.70	27.82	0.12
160	162½	3.05	22.04	0.15
162½	165	1.50	32.10	0.12
165	167½	14.60	29.53	0.14
167½	170	3.30	27.82	0.12
170	172½	1.85	20.97	0.12
172½	175	1.25	19.68	0.12
175	177½	0. 30	14.33	0.14
177½	180	0.85	20.75	0.14

Geologist: H. E. Davis

DRILL RECORD

THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 12

Property Name: CLARENCE P. RALPH
Started: October 8, 1953. Finished: October 13, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 937.44'

DEPTH		DESCRIPTION
0	3	Soil
3	10	Dark buff dolomite, dark red chert 99-1, trace of marcasite, few specks of limonite
10	15	(Coarse cuts) Buff dolomite, few specks dark buff and red chert, specks of light gray chert, few specks of marcasite
15	20	Buff dolomite, few specks of marcasite
20	30	Light buff dolomite, specks of marcasite
30	35	Pale brown calcareous dolomite, few specks of marcasite
35	40	Pale brown clacareous dolomite, few specks of marcasite
40	45	Light brown clacareous dolomite, few specks of marcasite
45	50	Brown dolomite, gray and brown chert 96-4, marcasite 2/10, few specks of blende DRAB-47.5'
50	55	Brown dolomite, marcasite-speckled chert 88-12, marcasite 8, blende 1/2
55	60	Brown dolomite, gray and marcasite-speckled chert 90-10, marcasite 6, blende 1
60	65	Brown dolomite, tan and marcasite-speckled chert 94-6, marcasite 9, blende 3, galena 1/2
65	70	Brown dolomite, brown-gray chert 92-8, marcasite 5, blende 3, trace of galena
70	75	Brown dolomite and gray dolomite, trace of gray chert, marcasite 4, blende 2, trace of galena
75	80	Light brown dolomite, gray and white chert 80-20, marcasite 3, blende 1, few specks of galena
80	85	Light brown dolomite, tan and light gray chert 94-6, marcasite 2, blende 7/10
85	90	Brown dolomite, gray and tan chert 93-7, marcasite 2, blende 1/2, trace of galena
90	95	Brown dolomite, gray-brown chert 93-7, marcasite 2, blende 3/10, few specks of galena
95	100	Brown dolomite, gray-brown chert 95-5, marcasite 3, blende 3, few specks of galena
100	105	Brown dolomite, gray-brown chert 96-4, marcasite 5, blende 7
105	107½	Brown dolomite, gray-brown chert 96-4, speck of gray shale, marcasite 5, blende 3
107½	110	Brown dolomite, gray-brown chert 99-1, marcasite 4, blende 4
110	115	Brown dolomite, trace of gray chert, marcasite 7, blende 5
115	117½	Light brown dolomite, few specks of chert, marcasite 15, blende 6
117½	120	Brown dolomite, gray chert (trace), marcasite 7, blende 2
120	122½	Brown dolomite, brown-gray chert 98-2, marcasite 16, blende 3, few specks of galena
122½	125	Brown dolomite, gray marcasite-speckled chert 96-4, marcasite 8, blende 2
125	130	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 10, blende 2
130	135	Brown dolomite, gray marcasite-speckled chert 80-20, marcasite 25, blende 4
135	140	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 11, blende 1 GRAY- 141.5'

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 12 CON'T.

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
140	145	Gray dolomite, brown dolomite 70-30, marcasite 6, blende 1
145	147½	Gray dolomite, marcasite 5, blende 1/2
147½	150	Brown-gray dolomite, marcasite 4, blende 7/10
150	152½	Brown-gray dolomite, marcasite 3, blende 1/2
152½	155	(Coarse cuts) Brown-gray dolomite, marcasite 2, blende 1/10
155	157½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, gray clay 1, few specks of calcite, marcasite 1, blende 1/10 BLUE- 156'
157½	160	Gray dark-speckled dolomite, gray clay 4, marcasite 4, blende 3/10
160	162½	Gray dark-speckled dolomite, marcasite 5, blende 1/10
162½	165	Gray dark-speckled dolomite, marcasite 20, blende 10 OIL-167'
165	167½	Gray marcasite-speckled dolomite, brown dolomite and dark shale 80-20, marcasite 40, blende 20
167½	170	Dark brown dolomitic limestone and dark brown shaly limestone, marcasite 18, blende 8 CLAY- 171.5'
170	172½	Brown fossiliferous dolomitic limestone and brown shaly limestone, green clay 60-40, marcasite 7, blende 4, few specks of galena
172½	175	Gray clay, gray-brown dark fossiliferous dolomitic limestone 70-30, marcasite 5, blende 2, few specks of galena
175	177½	Gray dolomitic limestone, dark brown dolomitic limestone, chocolate brown shale 60-38-2, marcasite 3, blende 1, speck of galena GLASS- 175'
177½	180	Gray dolomitic limestone (some marcasite-speckled dolomite) trace of calcite, marcasite 6, blende 4 McGREGOR- 176'
180	182½	Gray dolomitic limestone (some marcasite-speckled dolomite) calcite 1, marcasite 5, coarse blende 5
182½	185	Brown-gray dolomitic limestone, marcasite 10, blende 5
185	187½	Brown-gray dolomitic limestone, few specks of calcite, marcasite 5, blende 2
187½	190	Brown-gray dolomitic limestone, marcasite 4, blende 3
190	192½	Gray dark-speckled limestone, trace of gray clay, marcasite 3, blende 2,
192½	195	Gray dark speckled limestone, marcasite 1, blende 1
195	197½	Gray dark speckled limestone, marcasite 1, blende 1
197½	200	Gray limestone, marcasite 1, blende 1

T.D.H: 200.4 feet, with steel tape
Water: 15 feet
Assays: Yes
Location: North 45 degrees, 75 feet East from Drill Hole #11.

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 12

Property Name: CLARENCE P. RALPH

ASSAY

Depth		Blende	FeS_2	Galena
55	60	0.45	6.42	0.12
60	65	1.40	5.99	0.53
65	70	1.70	5.56	0.17
70	75	1.45	5.35	0.15
75	80	0.45	4.70	0.12
95	100	3.80	5.77	0116
100	105	5.50	4.70	0.15
105	107½	3.40	5.77	0.13
107½	110	4.95	4.92	0.12
110	115	0.40	7.91	0.12
115	117½	1.30	8.56	0.12
117½	120	1.00	5.99	0.12
120	122½	0.85	13.26	0.15
122½	125	0.75	6.84	0.13
125	130	0.55	9.63	0.13
130	135	0.65	14.98	0.12
135	140	0.25	10.91	0.13
140	145	0.40	6.20	0.13
162½	165	11.70	12.62	0.13
165	167½	17.25	31.03	0.16
167½	170	4.95	14.98	0.15
170	172½	3.00	10.48	0.15
172½	175	1.35	9.63	0.15
175	177½	1.80	8.77	0.13
177½	180	2.25	10.05	0.13
180	182½	3.15	10.48	0.13
182½	185	3.50	7.27	0.12
185	187½	2.10	6.42	0.12
187½	190	1.95	6.42	0.13

Geologist: H. A. Davis

DRILL RECORD

(EXPLORATION COMPANY

DRILL HOLE NO. 13

Property Name: CLARENCE F. RALPH
Started: October 13, 1953. Finished: October 15, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 958.64'

DEPTH		DESCRIPTION
0	10	Dark brown-buff clay
10	15	Dark buff clay, buff dolomite (coarse cuts) 90-10, limonite 2
15	20	(Coarse cuts) Buff dolomite, trace of limonite
20	30	Coarse cuts: Buff dolomite, few specks of limonite
30	40	Buff dolomite, few specks limonite and marcasite
40	45	Brown-buff dolomite, trace of marcasite, few specks of blende
45	50	Buff-brown dolomite, marcasite 1/10, speck of blende
50	55	Brown calcareous dolomite, marcasite 1/2, speck of blende
55	60	Brown calcareous dolomite, few specks of marcasite-speckled dolomite, marcasite 1/2, few specks of blende
60	65	Brown calcareous dolomite, marcasite 4/10, speck of blende
65	70	Brown calcareous dolomite, marcasite 1, thin trace of blende
70	75	Gray-brown dolomite, few specks brown chert, marcasite 6/10
75	80	Brown dolomite, gray chert 92-8, marcasite 3/10 DRAB- 75'
80	90	Brown dolomite, gray, brown and marcasite-speckled chert 90-10, trace of brown shale, marcasite 3
90	100	Brown dolomite, gray chert 91-9, trace of brown shale, marcasite 3.
100	110	Brown-gray dolomite, gray and white chert 92-8, marcasite 3, a speck of blende (115 - 140' small recovery)
110	120	Pale brown dolomite, brown-gray and white chert 93-7, marcasite 4, a speck of blende
120	130	Brown dolomite, gray chert 97-3, marcasite 5, speck of blende and galena
130	135	Brown dolomite, white chert 99-1, few specks pale green shale, marcasite 3, a speck of blende and galena
135	140	Brown dolomite, trace of tan chert, marcasite 2, a speck of blende and galena
140	150	Brown dolomite, tan chert 97-3, marcasite 2, galena 2/10
150	155	Dark brown dolomite, marcasite-speckled chert 60-40, marcasite 3, galena 1/10
155	160	Brown dolomite, gray-brown and marcasite-speckled chert 75-25, marcasite 2, trace of galena
160	165	Brown dolomite, few specks of chert, marcasite 1, few specks of galena GRAY- 168.5'
165	170	Brown dolomite, gray dolomite 70-30, marcasite 1½, galena traces
170	172½	Brown-gray dolomite, marcasite 8/10, few specks of galena
172½	175	Brown-gray dolomite, marcasite 2½, speck of galena
175	177½	Gray-brown dolomite, marcasite 1, speck of galena
177½	180	Brown-gray dolomite, marcasite 3, trace of galena BLUE- 132.5'
180	182½	Brown-gray dolomite, gray clay 1, marcasite 1, few specks galena
182½	185	Gray and brown-gray dark speckled dolomite, gray clay 10, marcasite 1
185	187½	Gray dark speckled dolomite, marcasite 6/10
187½	190	Gray dark speckled dolomite, brown dolomite 80-20, gray clay 2, marcasite 1/2 OIL ROCK- 189.5'

(CONTINUED ON NEXT PAGE)

Geologist: H. W. Davis

DRILL HOLE NO. 13 CON'T.

DEPTH		DESCRIPTION
190	192½	Brown fossiliferous dolomitic limestone, marcasite 1/2, few specks of blende
192½	195	Brown fossiliferous dolomitic limestone, dark brown shale 80-20, brown clay 2, marcasite 2/10, few specks of blende and galena CLAY - 196.5'
195	197½	Brown dolomitic limestone, gray clay 60-40, marcasite 2, few specks of blende and galena
197½	200	Coarse cuts: Dark brown dolomitic limestone,(little gray dolomite ravelling), calcite 1, marcasite 1
200	202½	Gray dolomitic limestone, brown limestone, chocolate brown shale 70-29-1, marcasite 6/10, speck of blende GLASS- 198.5' McCALLUM- 200.7'

T.D.: 202.4 feet, with steel tape
Water: 30 feet
Assays: None

Location: North 45 degrees, East 100 feet from Drill hole #10.

Geologist: H. R. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 14

Property Name: CLARENCE P. RALPH
Started: October 15,1953. Finished: October 20,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 962.10'

DEPTH		DESCRIPTION
0	5	Soil
5	10	Coarse cuts: Dark buff dolomite, specks of marcasite and limonite
10	15	Buff dolomite
15	20	Buff dolomite, limonite 1/10, speck of marcasite
20	30	Buff dolomite, trace of limonite
30	40	Brown-buff dolomite
40	50	Brown-buff dolomite, speck of marcasite
50	55	Buffish-brown dolomite, few specks of calcite, marcasite 2/10
55	60	Brown calcareous dolomite, marcasite 1/10
60	65	Brown calcareous dolomite, marcasite 2/10
65	70	Brown calcareous dolomite, marcasite 4/10 DRAB- 72.5'
70	75	Brown dolomite, brown chert 97-3, trace of dark brown shale, marcasite 2,
75	80	Brown dolomite, gray marcasite-speckled dolomite, gray-brown dolomite 88-12, marcasite 3, speck of blende
80	85	Brown dolomite, brown chert and gray marcasite-speckled chert 90-10, marcasite 5
85	90	Brown dolomite, brown chert and gray marcasite-speckled chert 90-10, marcasite 8
90	95	Brown dolomite, gray-brown chert 95-5, marcasite 4, few specks of blende
95	100	Brown dolomite, gray-brown chert 96-4, marcasite 2, a speck of blende
100	105	Brown dolomite, gray chert 98-2, marcasite 10, few specks blende
105	110	Light brown-gray dolomite, light gray and white chert 85-15, marcasite 4
110	115	Brown dolomite, light gray chert 99-1, marcasite 2
115	120	Brown dolomite, gray and gray-brown chert 60-40, marcasite 3, few specks of blende
120	130	Brown dolomite, tan chert 94-6, marcasite 1
130	140	Brown dolomite, tan chert 98-2, marcasite 3/10
140	145	Brown marcasite-speckled dolomite, tan chert 97-3, marcasite 3, speck of galena
145	150	Dark brown marcasite-speckled dolomite, trace of tan chert, marcasite 15, few specks of galena
150	155	Dark brown dolomite, marcasite-speckled chert and brown chert 82-18, marcasite 9, few specks of galena
155	160	Brown dolomite, gray-brown marcasite-speckled and brown chert 88-12, marcasite 5, a speck of galena
160	165	Dark brown dolomite, few specks gray-brown chert, marcasite 6,
165	170	Gray dolomite, brown dolomite 90-10, marcasite 2. GRAY-165.5'
170	175	Gray marcasite-speckled dolomite and brown-gray dolomite, trace of pale green clay, marcasite 1
175	177½	Brown-gray dolomite, marcasite 5/10, speck of calcite

(CONTINUED ON NEXT PAGE)

 Geologist: H. K. Davis

DRILL HOLE NO. 14 CON'T.

Property Name: CLARENCE P. RALPH.

DEPTH		DESCRIPTION
177½	180	Brown-gray dolomite, marcasite 1 BLUE- 181.0'
180	182½	Gray dark-speckled dolomite, brown-gray dolomite 60-40, gray clay 5, marcasite 6/10
182½	185	Gray dark-speckled dolomite, trace of calcite, marcasite 8/10
185	187½	Gray dark-speckled dolomite, gray clay 2, trace of calcite, marcasite 1/2 OIL ROCK- 187.6'
187½	190	Brown fossiliferous dolomitic limestone, gray dark-speckled dolomite 95-5, marcasite 3/10
190	192½	Coarse cuts: Brown fossiliferous dolomitic limestone, marcasite 1/2
192½	195	Tan limestone, dark brown shaly limestone 95-5, light gray clay 1, marcasite 2/10
195	197½	Light gray clay, brown-gray fossiliferous limestone 80-20, few specks of phosphorous nodules, marcasite 1/10 CLAY-195'
197½	200	Coarse cuts: Very dark brown dolomitic limestone, trace of gray clay, trace of calcite, marcasite 4/10 GLASS- 198.5' as per driller.
200	202½	Brown limestone and dolomitic limestone, gray limestone and dolomitic limestone (coarse cuts) 60-40, chocolate brown shale 1, marcasite 2/10, specks of calcite. McGREGOR- 201.5'

T.D.M: 202.5 feet, with steel tape.
Water: 42½ feet
Assays: No.

Location: 100 feet East from Drill Hole # 13.

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 15

Property Name: CLARENCE P. RALPH
Started: October 20,1953. Finished: October 23, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L. B. Brown

COLLAR ELEVATION: 954.30'

DEPTH		DESCRIPTION
0	6½	Soil
6½	10	Buffish-brown clay, buff dolomite 80-20, trace of limonite
10	20	Coarse cuts: Buff dolomite, limonite 1/2
20	30	Buff dolomite, trace of limonite
30	40	Buff and dark buff dolomite, few specks of calcite
40	45	Dark buff dolomite, limonite 1/10
45	50	Brown dolomite, dark buff dolomite 90-10, few specks marcasite
50	55	Coarse cuts: Brown dolomite, dark buff dolomite 99-1, few specks of marcasite
55	60	Brown dolomite, dark brown chert 97-3, few specks marcasite
		DRAB- 57.5'
60	65	Brown dolomite, gray and tan chert 93-7, marcasite 1/10
65	70	Brown dolomite, gray and tan chert 96-4, marcasite 4/10, few specks of blende
70	80	Fine cuts: Brown dolomite, gray and tan chert 95-5, marcasite 3, a speck of blende
80	90	Brown dolomite, gray chert 93-7, marcasite 1
90	100	Brown-gray dolomite, light gray and white chert 91-9, marcasite 3/10
100	110	Brown dolomite, gray chert 92-8, marcasite 2/10
110	120	Brown dolomite, gray chert 99-1, marcasite 3/10
120	130	Brown dolomite, tan chert 96-4, marcasite 1/2
130	140	Brown dolomite, speck tan chert, marcasite 7/10, few specks blende
140	145	Brown dolomite, tan, brown and marcasite-speckled chert 92-8, marcasite 7, blende 1
145	150	Brown dolomite, tan, gray and brown and marcasite-speckled chert 90-10, marcasite 7, blende 1
150	155	Small recovery: Brown dolomite, tan and gray chert 98-2, marcasite 12, blende 10
155	157½	Small recovery: Brown dolomite, specks of gray dolomite, marcasite 20, blende 10
157½	160	Small recovery: Gray dolomite, marcasite 15, blende 20
		GRAY-157½'
160	162½	Gray dolomite, marcasite 10, blende 4
162½	165	Gray dolomite, marcasite 5, blende 25
165	167½	Small recovery: Gray dolomite, marcasite 20, blende 10
167½	170	No recovery:
170	172½	Gray marcasite-speckled dolomite, marcasite 40, blende 5
		BLUE- 172.5'
172½	175	Gray clay and gray dark-speckled dolomite, marcasite 80, few specks of blende
175	177½	Gray dark-speckled dolomite and gray clay, some fossils, marcasite 75, blende (?)
177½	180	Brown fossiliferous dolomites limestone, marcasite 15, blende 2
		OIL ROCK- 177.5'

(CONTINUED ON NEXT PAGE)

Geologist: H. [illegible] Davis

DRILL HOLE NO. 15 CONT'D.

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
180	182½	Brown fossiliferous dolomitic limestone and tan fossiliferous limestone, marcasite 25, blende 4
182½	185	Brown-gray fossiliferous limestone, green clay 90-10, marcasite 30, blende 8
185	187½	Brown dolomitic limestone, marcasite 12, blende 3
187½	190	Dark brown and tan limestone, marcasite 18, blende 7
190	192½	Gray dolomitic limestone, brown limestone and tan limestone, 80-20, marcasite 9, blende 4
192½	195	Gray dolomitic limestone, brown limestone 90-10, calcite 3, marcasite 3, blende 1
195	197½	Gray dolomitic limestone, btown limestone 95-5, marcasite 2, blende 7/10

CLAY- 184.7'*
GLASS- 185.0'*
McGREGOR- 190.5'

T.D.M: 197.5 feet, with steel tape
Water: 33 feet
Assays: Yes.

I believe the mineralization below 177½ is ravelling.
* See driller's remarks for thickness of claybed.

DRILLER'S REMARKS:

Broken ground and lost most cuts 140 to 175'
oft ground 175 - 185'
Clay bed 183 to 186½

Location: North 20° East 100 feet from Drill Hole #14.

ASSAY

C. P. Ralph # 15	Blende	FeS_2	Galena
150-155	17.05	10.27	0.12
155-157½	10.75	12.84	0.12
157½-160	27.25	14.55	0.17
160-162½	4.25	7.70	0.12
162½-165	29.25	8.14	0.12
165-167½	6.20	15.83	0.15
170-172½	5.00	32.10	0.12
172½-175	1.45	52.21	0.13
175-177½	0.70	35.95	0.12
177½-180	0.70	19.47	0.12
180-182½	1.00	18.19	0.12
182½-185	1.45	16.26	0.12
187½-190	3.10	13.00	0.32

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 16

Property Name: CLARENCE P. RALPH
Started: October 23, 1953. Finished:
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 950.11'

DEPTH		DESCRIPTION
0	5	Soil
5	10	Buff dolomite, speck of marcasite
10	15	Buff dolomite, speck of marcasite
15	30	Buff dolomite, speck of marcasite
30	40	Buff dolomite, speck of sphalerite
40	45	Buff dolomite
45	50	Gray-brown dolomite and buff dolomite 65-35, few specks dark brown chert, speck of blende
50	55	Brown dolomite, light gray and white chert 92-8, marcasite 3/10, few specks of blende
55	60	Brown dolomite, gray and marcasite-speckled chert 95-5, marcasite 5, blende 2/10 — DRAB- 50'
60	70	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, marcasite 5, blende 2/10
70	80	Brown dolomite, grown-gray chert 97-3, marcasite 1, trace of blende
80	90	Brown gray dolomite, light gray and white chert 75-25, marcasite 1, blende 1/10
90	100	Brown dolomite, gray-brown chert 99-1, marcasite 6/10, blende 1/10
100	110	Brown dolomite, gray-tan chert 99-1, marcasite 7/10, trace of blende
110	120	Brown dolomite, gray and tan chert 90-10-, marcasite 2, few specks of blende
120	125	Dark brown marcasite-speckled dolomite, few specks of chert, few specks of calcite, marcasite 10, few specks of blende
125	130	Dark brown dolomite, marcasite-speckled chert 60-40, marcasite 30, blende 1(?)
130	135	Fine cuts: Brown dolomite, gray marcasite-speckled chert and tan chert 90-10, trace of dark gray cave clay, marcasite 15, blende 2/10
135	140	No recovery — GRAY- 140.5'
140	145	Gray dolomite and brown dolomite 90-10, marcasite 10, few specks of blende
145	147½	Gray dolomite, marcasite 7
147½	150	Small recovery: Gray dolomite, marcasite 12, speck of blende
150	152½	Gray dolomite, marcasite 9, blende 5
152½	155	Small recovery: Brown-gray dolomite, marcasite 12, blende 3
155	157½	Small recovery: Brown-gray dolomite, marcasite 5, blende 1
157½	160	No recovery — BLUE- 157.5'
160	162½	Gray dark speckled dolomite, marcasite 20, blende 2
162½	165	Gray dark speckled dolomite, gray clay 1, marcasite 60, blende 4
165	167½	Pale brown fossiliferous dolomitic limestone, few specks dark gray speckled dolomite, marcasite 20, blende 4 — OIL ROCK- 165'
167½	170	Pale brown fossiliferous dolomitic limestone and dark brown shaly limestone, marcasite 15, blende 3 — CLAY- 170.1'
170	172½	Gray clay, brown fossiliferous dolomitic limestone 95-5, marcasite 3, blende 1/2
172½	175	Bentonite — GLASS- 175'

(CONTINUED ON NEXT PAGE)

Geologist: H. W. Davis

DRILL HOLE NO. 16 CON'T.

Property Name: CLARENCE P. RALPH.

DEPTH		DESCRIPTION
175	177½	Light brown dolomite, dark brown dolomite 90-10, calcite 1 marcasite 30, blende 5
177½	180	Light brown dolomite, marcasite 25, blende 4
180	182½	Very small recovery: Light brown dolomite, few coars cuts of dark brown shale. marcasite 20, blende 4
182½	185	Gray dolomitic limestone, light brown dolomite 95-5, marcasite 7, blende 1.5

McGREGOR- 182.6'

T.D.M: 184.3 feet, with steel tape
Water: 20 feet
Assays: Yes
Location: North 75°, East 100 feet from drill hole #15.

Driller's Remarks: Broken ground 120 - 160; lost most of cuttings
Lost all cuts 135 - 140 and 157½ - 160'

Soft ground 160 - 170
Claybed 171½ - 175
Strong Water 180 - 182½, lost practically all of cuts.

L.J.Brown.

It is doubtful that the mineralization below 185' is in place. I think it is ravelling.

H. W. Davis.

ASSAY

		Blende	FeS_2	Galena
C. P. Ralph # 16	125-130	0.15	9.41	Trace
	130-135	0.45	16.90	"
	150-152½	1.75	9.63	"
	152½-155	1.62	7.06	"
	155-157½	1.40	7.06	"
	160-162½	1.30	26.75	"
	162½-165	2.55	42.58	"
	165½-167½	0.25	28.24	0.13
	167½-170	1.40	20.50	0.12
	170-172½	0.10	16.69	0.13
	172½-175	0.30	17.54	Trace
	175-177½	2.80	25.89	"
	177½-180	0.05	16.26	"
	180-182½	1.60	25.46	"
	182½-185	0.45	9.63	"

Geologist: H. [illegible] Davis

BILL [illegible]
THE [illegible]-FISHER COMPANY

DRILL HOLE NO. 17

Property Name: CLARENCE P. RALPH
Started: October 23, 1953. Finished: October 30, 1953
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 957.12'

DEPTH		DESCRIPTION
0	5	Fill
5	10	Buff clay
10	20	Dark buff dolomite, few specks of limonite
20	30	Dark buff dolomite, speck of limonite
30	40	Buff dolomite, speck of limonite
40	45	Buff dolomite, few specks of marcasite
45	50	Buff dolomite, brown dolomite 70-30, few specks of marcasite
50	55	Gray-brown dolomite, (few coarse cuts), few specks of marcasite
55	60	Gray-brown dolomite, buff dolomite, brown chert 60-38-2, few specks of marcasite DRAB- 57.5'
60	65	Brown-buff dolomite, gray-brown chert 92-8, marcasite 2/10
65	70	Brown dolomite, gray-brown and tan chert 90-10, marcasite 7
70	75	Brown dolomite, gray, brown and marcasite-speckled chert 93-7, marcasite 4
75	80	Brown dolomite, gray and tan chert 91-9, marcasite 2
80	90	Pale brown dolomite, light gray and white chert 92-8, marcasite 2
90	100	Pale brown dolomite, light gray and white chert 92-8, marcasite 1
100	110	Pale brown dolomite, gray and tan chert 94-6, marcasite 1/2
110	120	Brown dolomite, tan chert 93-7, marcasite 1, speck of galena
120	130	Brown dolomite, tan chert 99-1, marcasite 1/2
130	135	Brown dolomite, marcasite-speckled chert 92-8, marcasite 10
135	140	Brown dolomite, marcasite-speckled chert 85-15, marcasite 20
140	145	Brown dolomite, gray and marcasite-speckled chert 60-40, marcasite 15
145	150	Gray dolomite, brown dolomite 70-30, marcasite 7. GRAY- 146.5'
150	155	Gray dolomite, marcasite 2
155	157½	Brown-gray dolomite, marcasite 4
157½	160	Brown-gray dolomite, marcasite 3 BLUE- 161.5'
160	162½	Brown-gray dolomite, dark gray dark-speckled dolomite 60-40, gray clay 1, marcasite 2
162½	165	Gray dark-speckled dolomite, specks of calcite, marcasite 1, specks of blende
165	167½	Gray dark-speckled dolomite, trace of calcite, marcasite 2, trace of blende
167½	170	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 90-10, calcite 3, marcasite 2, thin trace of blende OIL ROCK- 169.8'
170	172½	Brown fossiliferous dolomitic limestone, marcasite 2, blende 1/2
172½	175	Brown fossiliferous dolomitic limestone, marcasite 1, blende 4/10
175	177½	Brown fossiliferous limestone, marcasite 3/10, blende 1/10
177½	180	Brown fossiliferous limestone, gray clay 95-5, marcasite 1, blende 1/10 CLAY- 179'
180	182½	Gray-brown fossiliferous limestone, pale green clay 80-20, marcasite 2/10, few specks of blende, trace of phosphates CLAY- 182'

(CONTINUED ON NEXT PAGE)

Geologist: R. W. Davis

DRILL HOLE NO. 17 CON'T.

Property Name: CLARENCE F. RALPH.

FROM	TO	DESCRIPTION
182½	185	Coarse cuts: Dark brown dolomite and light brown dolomite 80-20, calcite 5, marcasite 4/10, a speck of blende
185	187½	Very dark brown dolomitic limestone, chocolate brown shale 90-10, calcite 1, marcasite 2 McGREGOR- 187.5'
187½	190	Gray dolomitic limestone, marcasite 1/10

T.D.: 191.5 feet, with steel tape
Water: 39 feet
Assays: No

Location: South 30 degrees, East 200 feet from Drill Hole # 16.

Geologist: H. T. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

USGS

DRILL HOLE NO. 18

Property Name: CLARENCE P. RALPH
Began: October 30,1953. Finished: November 5, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 971.38'

DEPTH		DESCRIPTION
0	5	Black soil
5	10	Buff clay
10	15	Dark reddish-buff clay
15	20	Reddish-buff clay
20	25	Dark buff clay
25	30	Dark buff clay
30	35	Dark buff clay
35	40	Buff dolomite, reddish-buff clay 60-40, speck of limonite
40	45	Buff dolomite, buff clay 90-10, limonite 1
45	50	Coarse cuts: Buff dolomite, trace of limonite
50	55	Coarse cuts: Light buff dolomite, gray clay 95-5, speck of limonite
55	60	Coarse cuts: Light buff dolomite, speck of limonite
60	65	Coarse cuts: Buff dolomite
65	70	Coarse cuts: Dark buff dolomite
70	75	Dark buff dolomite- coarse cuts
75	80	Dark buff dolomite
80	85	Dark buff dolomite and pale buff dolomite, light gray and white chert 95-5, few specks dark brown chert, few specks of limonite DRAB- 82.5'
85	90	Buff dolomite, brown buff, light gray and white chert 92-8, gray and brown cave clay 4, trace of limonite, speck of galena
90	95	No recovery--lost cuts
95	100	Buff dolomite, brown and buff chert 92-8, trace of galena, thin trace of limonite
100	105	Buff dolomite, buff and brown chert 94-6, few specks of limonite, few specks of galena
105	115	Buff dolomite, buff and brown chert 95-5, few specks of marcasite, few specks of galena
115	120	Buff dolomite, white and light gray chert 88-12, speck of marcasite, speck of limonite, speck of galena
120	130	Buff dolomite, white and light gray chert 92-8, few specks of limonite, few specks of galena
130	140	No recovery---lost cuts
140	145	Small recovery: Buff dolomite, tan chert 96-4, trace of dark brown clay
145	155	No recovery--lost cuts
155	160	Small recovery: Buff dolomite, tan and brown-gray chert 94-6, marcasite 1/2, a speck of blende
160	165	Small recovery: Buff dolomite, gray, brown and tan chert 95-5, marcasite 7/10, a speck of blende
165	175	No recovery--- lost cuts
175	180	Buffish-brown dolomite, tan, gray and brown chert 92-8, marcasite 4/10
180	185	Buffish-brown dolomite, gray and brown chert 96-4, marcasite 8
185	190	Gray dolomite, considerable ravelling, buff dolomite and chert, marcasite 1/2 GRAY- 185'

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 18 CON'T)

Property Name: CLARENCE P. RALPH

DEPTH		DESCRIPTION
190	192½	Gray dolomite, some ravellings, buff dolomite and chert, few specks greenshale, marcasite 1/2
192½	195	Gray and brown dolomite, some ravellings of buff dolomite and chert, few specks of green shale, marcasite 4/10
195	197½	Brown-gray calcareous dolomite, marcasite 1/2
197½	200	Brown-gray calcareous dolomite, marcasite 3. BLUE-200'
200	202½	Gray marcasite-speckled dolomite, gray clay 1, marcasite 20
202½	205	Gray dark-speckled marcasite speckled dolomite, marcasite 18
205	207½	Gray dark speckled dolomite, few specks of brown chert, trace green clay, marcasite 18
207½	210	Brown fossiliferous dolomitic limestone and dark brown shale, numerous fossils, marcasite 12 OIL ROCK- 207.5'
210	212½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 8, trace of blende, specks of phosphate CLAY- 212'
212½	215	Brown dolomitic limestone and numerous fossils, bentonite 10, marcasite 7, trace of blende
215	217½	Dark brown dolomite, some fossiliferous ravelling, marcasite 5 GLASS ROCK- 215'
217½	220	Dark brown dolomite, trace of chocolate brown shale, marcasite 7
220	222	Dark brown dolomite, gray dolomitic limestone 50-50, trace of chocolate brown shale, marcasite 8 McGREGOR- 221'

T.D.M: 221.5 feet, with steel tape
Water: 54 feet
Assays: Yes, for iron 200-210
Location: 200 feet south and 200 feet east from Drill Hole # 9

REMARKS: Very loose, cavey hole
6½" hole to 176ft.
4 7/8" hole 176 to 222'

Samples for Fe S
Not received. Use estimates
RLL

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 19

Property Name: CLARENCE P. RALPH
Started: November 5, 1953. Finished: November 7, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 962.74'

DEPTH		DESCRIPTION
0	6	Buffish brown clay
6	10	Buff dolomite
10	20	Buff dolomite
20	30	Rather coarse cuts: Buff dolomite
30	40	Buff to dark buff dolomite
40	50	Dark buff dolomite
50	55	Dark buff limonite-speckled dolomite
55	60	Dark buff dolomite, few specks of limonite
60	65	Brown dolomite, dark buff dolomite 60-40, trace of marcasite
65	70	Brown dolomite, dark brown and gray-brown chert 95-5, marcasit 2/10 DRAB- 67.5'
70	80	Brown dolomite, gray-brown chert 92-8, marcasite 1
80	90	Brown dolomite, gray-brown chert 94-6, marcasite 2
90	100	Brown dolomite, brown-gray chert 93-7, marcasite 2
100	110	Brown-gray dolomite, light gray and white chert 88-12, marcasite 4/10
110	120	Light brown dolomite, brown-gray chert 94-6, marcasite 6/10
120	130	Brown dolomite, brown-gray chert 92-8, trace of tan chert, marcasite 7/10
130	140	Brown dolomite, few specks tan chert, marcasite 2
140	145	Brown dolomite, few specks tan chert, marcasite 12
145	150	Brown dolomite, gray chert (slightly marcasite-speckled) and brown chert 70-30, marcasite 5
150	155	Brown dolomite, brown-gray chert 90-10, marcasite 6
155	160	Brown dolomite, gray-brown chert 96-4, few specks gray dolomite, marcasite 4
160	162½	Gray dolomite, marcasite 1 GRAY- 160'
162½	165	Gray to brown-gray dolomite, marcasite 7/10
165	167½	Brown-gray dolomite, marcasite 8/10
167½	170	Brown-gray dolomite, marcasite 1/2
170	172½	Brown-gray dolomite, marcasite 4/10 BLUE- 173'
172½	175	Gray dark-speckled dolomite, brown-gray dolomite 80-20, marcasite 1/2
175	177½	Gray dark-speckled dolomite, marcasite 3/10
177½	180	Dark gray dark-speckled dolomite, few specks calcite, marcasite 4/10 OIL ROCK- 180'
180	182½	Brown dolomitic limestone, few fossils, marcasite 2/10, thin trace of blende
182½	185	Brown fossiliferous dolomitic limestone, trace of dark brown shale, marcasite 1/10, few specks of blende
185	187½	Light brown fossiliferous limestone, dark brown dolomitic limestone 90-10, marcasite 1/10, a speck of blende
187½	190	Gray dark fossiliferous speckled limestone, green clay 60-40, marcasite 2/10, specks of phosphate CLAY- 189.0'
190	192½	Bentonite and gray fossiliferous limestone, marcasite 2/10
192½	195	Dark brown dolomitic limestone, chocolate brown shale 95-5, marcasite 2/10 GLASS- 192.5'
195	197½	Brown limestone and dolomitic limestone, gray ~~dolomitic~~ limestone (coarse cuts) 60-40, chocolate brown shale 3, marcasite 1/10 McGREGOR- 196.5'

(CONTINUED ON NEXT PAGE)

 Geologist: H. V. Davis

DRILL HOLE NO. 19 CON'T.

Property Name: CLARENCE P. RALPH

DEPTH	DESCRIPTION
197½ 200	Gray dolomitic limestone, marcasite 3/10

T.D.M: 200.3 feet, with steel tape
Water: 45 feet
Assays: No

Remarks: A firm hole all the way

Location: 100 feet West from Drill Hole # 17.

Geologist: H. R. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 20

Property Name: CLARENCE F. RALPH
Started: November 9,1953. Finished: November 11, 1953
Drill Owner: J. F. Robinson
Drill Runner: L. J.Brown

COLLAR ELEVATIONS: 950.30'

DEPTH		DESCRIPTION
0	5	Brown-buff clay
5	10	Dark buff clay
10	15	Coarse cuts: Dark buff dolomite, limonite 1/2, some dark buff clay
15	20	Coarse cuts: dark buff dolomite, limonite 5
20	25	Coarse cuts: Dark buff dolomite, limonite 2
25	30	Coarse cuts: Dark buff dolomite, limonite 1
30	35	Coarse cuts: Buff dolomite, trace of limonite
35	40	Coarse cuts: Buff and dark buff dolomite, trace of limonite
40	45	Brown-buff to buff dolomite, trace of limonite and marcasite
45	50	Fine cuts: Buff dolomite, gray and brown-gray chert 94-6, dark buff clay 1, limonite and marcasite 3, blende 2/10 DRAB- 47.5'
50	55	Brown dolomite, gray and brown chert 91-9, marcasite 5, blende 6/10
55	60	Brown dolomite, gray-brown and brown chert 85-15, marcasite 5, blende 3/10, trace of limonite ravellings
60	65	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, limonite 1, marcasite 7, blende 4/10
65	70	Light brown dolomite, gray-brown chert 98-2, marcasite 1, few specks of blende
70	80	Gray dolomite, light gray and white chert 90-10, marcasite 7, blende 3/10
80	90	Gray-brown dolomite, gray chert 92-8, trace of white chert, marcasite 2, blende 1/10
90	100	Gray-brown dolomite, gray chert 96-4, marcasite 4/10, speck blende
100	110	Light brown dolomite, tan and gray chert 93-7, marcasite 3/10
110	120	Brown dolomite, gray and tan chert 96-4, marcasite 1, few specks of blende
120	130	Brown dolomite, gray marcasite-speckled chert and brown-gray chert 70-30, marcasite 7, blende 2/10
130	135	Brown dolomite, gray dolomite 80-20, brown-gray and marcasite-speckled chert 4, marcasite 3, trace of blende GRAY- 134'
135	137½	Gray dolomite, speck of green shale, marcasite 2, trace blende
137½	140	Gray dolomite, marcasite 3, few specks of blende
140	142½	Brown-gray dolomite, marcasite 7/10, few specks of blende
142½	145	Brown-gray dolomite, marcasite 1, few specks of blende
145	147½	Coarse cuts: Brown-gray dolomite, marcasite 3/10
147½	150	Brown-gray dolomite, marcasite 4/10, speck of calcite
150	152½	Dark gray dark-speckled dolomite, gray clay 3, marcasite 2/10, speck of blende BLUE- 150'
152½	155	Dark gray dark-speckled dolomite, marcasite ½, speck of blende, speck of calcite
155	157½	Dark gray dark-speckled dolomite, marcasite 6/10, few specks of blende, few specks of calcite. OIL ROCK- 157.5'
157½	160	Brown fossiliferous dolomitic limestone, ~~few specks gray~~ dark-speckled dolomite, marcasite 1, few specks of blende

(CONTINUED ON NEXT PAGE)

Geologist: H. W. Davis

DRILL HOLE NO. 20 60MST.

Property Name: CLARENCE P. RALPH.

DEPTH		DESCRIPTION
160	162½	Light brown and tan fossiliferous limestone, marcasite 7/10, a speck of blende
162½	165	Brown fossiliferous limestone and dark brown shaly limestone, marcasite 3/10, few specks of blende
165	167½	Brown and dark brown limestone, trace of marcasite, speck of blende
167½	170	Brown and dark brown limestone, trace of marcasite, speck of blende CLAY- 172.4'
170	172½	Gray and brown-gray dark fossiliferous speckled limestone, green clay 95-5, marcasite 2/10, speck of blende
172½	175	Brown limestone, dark gray-fossiliferous limestone 70-30, trace of gray clay, trace of marcasite, speck of blende
175	177½	Dark brown dolomitic limestone, trace of chocolate brown shale, trace of marcasite GLASS- 173.5'
177½	180	Dark brown dolomitic limestone and limestone, trace of chocolate brown shale, trace of marcasite. McGREGOR- 182.0'
180	182½	Brown dolomitic limestone, gray dolomite limestone 80-20, chocolate brown shale 1, marcasite 1/10, speck of blende
182½	185	Gray dolomitic limestone, brown dolomitic limestone, chocolate brown shale 80-18-2, marcasite 1/10, speck of blende

T.D.M: 186.0 feet, with steel tape
Water: 33 feet
Assays: No

DRILLER'S REMARKS:

Broken ground 45-50; 105-110; 130-150
Clay Bed 172½-175½

Location: North 45 degrees, 75 feet East from Drill Hole # 17.

Geologist: [illegible] avis

Y

[illegible] #1

Property [illegible]
[illegible] December 7, 1953. Finished: December 7, 1953.
Drill [illegible]: [illegible]
Drill [illegible]: L. J. Brown [illegible]: 995.5'

From	To	Description
0	5	Black soil
5	10	Buff dolomite, buff clay 60-40
10	15	Buff dolomite, buff clay 75-25
15	20	Coarse cuts: buff dolomite
20	30	Buff dolomite, few specks of limonite
30	50	Buff dolomite, trace of limonite
50	60	Buff limonite-speckled dolomite, limonite 1/2
60	70	Dark buff calcareous dolomite, limonite 2/10
70	80	Dark buff calcareous dolomite, limonite 1/10
80	85	Dark buff calcareous dolomite, trace of limonite
85	90	Buff and dark buff calcareous dolomite, few specks limonite
90	95	Gray-brown dolomite, dark buff dolomite 60-40, trace of calcite, few specks of limonite
		90' - 95'
95	100	Buffish-gray dolomite, dark buff dolomite, dark brown chert 90-9-1
100	105	Buffish-gray dolomite, brown chert 95-5, trace of gray chert, trace of limonite
105	110	Brown-buff dolomite, gray-brown chert 96-4, galena 2/10
110	115	Gray-brown dolomite, brown-buff dolomite, gray-brown chert 70-25-5, few specks marcasite, few specks of galena
115	120	Buffish-brown dolomite, tan chert 98-2, few specks of galena, specks of marcasite
120	130	Buffish-brown dolomite, gray chert 97-3, few specks of galena, specks of marcasite
130	135	Rather coarse cuts: gray dolomite, buff dolomite, gray chert 90-5-5, few specks marcasite, specks of galena
135	140	Fine cuts: brown-buff dolomite, light gray chert [illegible]-3, trace of galena, few specks of marcasite
140	145	Buff dolomite, tan chert 92-[illegible], trace of galena, trace of marcasite
145	150	Buff dolomite, gray dolomite, tan chert [illegible]-4-1, few specks of galena, speck of marcasite
150	160	Buff dolomite, tan chert [illegible]-1, trace of limonite, marcasite, trace of galena
160	170	Buff dolomite, tan chert 95-5, marcasite 2/10, few specks galena
170	180	Brown dolomite, gray marcasite-speckled chert and tan chert [illegible]-12, marcasite 5
180	185	Brown dolomite, brown-gray chert 90-10, few specks dark brown chert, marcasite 2.
185	190	Brown dolomite, brown-gray chert 90-10, trace of tan and brown chert, marcasite 2
190	195	Brown dolomite, gray dolomite [illegible]-20, buff clay 1, marcasite 1
195	200	Gray dolomite, buff dolomite [illegible]-2, marcasite 6.
		[illegible]-195'
200	202½	Gray dolomite, marcasite 10
202½	205	Brown-gray dolomite, marcasite [illegible]
205	210	No recovery- broken ground
		[illegible] - 210'

(Continued [illegible])

[illegible] 41 [illegible]

Property area: [illegible]

Depth		Description
210	212½	Gray dark-speckled dolomite, gray clay 90-10, some brown dolomite and brown-gray chert pavelling, marcasite 6, few specks of blende
212½	215	Gray dark-speckled dolomite, marcasite 10, blende 3/10
215	217½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 4
		IL [illegible]K- 217.5'
217½	220	Brown to siliceous dolomitic limestone, marcasite 7, blende 9
220	222½	Green clay, brown fossiliferous dolomitic limestone 95-5, marcasite 1(?), blende 1 (?), few specks of phosphate
222½	225	Bentonite and fossils, marcasite 2/10, blende 1/10
225	227½	Dark brown dolomite and fossiliferous limestone, [illegible] 95-5, few specks of chocolate [illegible], marcasite 10, [illegible] 2
		[illegible] - 229.5'
227½	230	Light brown limestone, marcasite 4, blende 1/10
230	232½	Gray dark-speckled dolomitic limestone, marcasite 3, blende 1/10

[illegible] : 236.6 feet, [illegible] steel tube
[illegible] 6[illegible] feet
[illegible] azimuth
Location: South 21°, west 125 feet from drill hole 9.

[illegible]:

[illegible] ground 55 - 115; 135-145; 170-190
[illegible] ground 190-215
[illegible] ground 215-225

[illegible] hole

A[illegible]YS

		blende	FeS2	Galena
210	212½	0.15	11.55	0.12
212½	215	0.10	14.95	0.12
215	217½	5.35	11.77	0.12
217½	220	5.35	11.12	0.12
220	222½	5.00	8.95	0.12
222½	225	2.75	7.91	0.12

8' 3.47 gm, [illegible]
[illegible]

Geologist: B. [illegible] Avis

[illegible]

DRILL HOLE NO. 22

Property Name: [illegible]
Started: Dec. 7, 1953. Finished: Dec. 11, 1953.
Drill Owner: J. F. Robinson
Drill Runner: L.J. Brown

COLLAR ELEVATION: 979.81'

DEPTH		DESCRIPTION
0	5	Soil
5	10	Brown-buff clay
10	15	Coarse cuts: Dark buff dolomite, trace of limonite and marcasite
15	20	Rather coarse cuts: Dark buff dolomite and buff dolomite, speck of marcasite
20	25	Rather coarse cuts: Buff dolomite and dark buff dolomite, speck of limonite
25	30	Buff dolomite, dark buff clay 60-40, speck of limonite
30	35	Buff dolomite, dark buff clay 80-20, trace of limonite
35	40	Buff dolomite, limonite 1/2
40	50	Buff dolomite, limonite 1/10
50	60	Buff dolomite, trace of limonite
60	70	Buff dolomite
70	75	Buff calcareous dolomite, limonite 1/2
75	80	Buff dolomite, limonite 10
80	85	Coarse cuts: Dark buff dolomite, limonite 35
85	90	Buff dolomite, limonite 60
90	95	Buff dolomite, dark buff clay, gray-brown & brown chert 98-2-1, limonite 20 — GRAY - 93'
95	100	Buffish-brown dolomite, gray-brown and marcasite-speckled chert 94-6, limonite 30, marcasite 1
100	105	Coarse buffish-brown dolomite, gray chert and marcasite-speckled chert 95-5, limonite 15, marcasite 5
105	110	Buff dolomite, -no chert - limonite 55, dark gray clay 2, trace of brown clay, marcasite 3/10
110	115	Buffish-brown dolomite, gray chert 90-10, limonite 15, marcasite 4/10
115	120	Brown-gray dolomite, gray chert 96-4, marcasite 8, limonite 4
120	125	Pale gray dolomite, light gray and white chert 85-15, marcasite 6, limonite 4
125	130	Buff dolomite and buffish-brown dolomite, gray and white chert 92-8, marcasite and limonite 2.
130	135	No recovery.
135	140	Buff dolomite, brown chert 70-30, marcasite 1
140	145	Buff dolomite, brown & gray chert 88-12, marcasite 2
145	150	Buff dolomite, brown & gray chert 94-6, marcasite 4
150	155	No recovery.
155	160	Buff dolomite, gray, tan & brown chert 95-5, marcasite - limonite 1
160	165	Brown marcasite-speckled dolomite, trace of tan chert, marcasite 5
165	170	Brown dolomite, gray, tan chert 80-20, marcasite 3
170	175	Buffish-brown dolomite, gray & tan chert 80-20, marcasite 3
175	180	No recovery.
180	185	Brown-buff dolomite (few cuts extra coarse), gray - blue-gray chert 75-25, marcasite 3
185	190	No recovery. — GRAY - 194.5'

(CONTINUED ON NEXT PAGE)

Geologist: [illegible] Davis

[illegible] 22 [illegible]

Property Name: [illegible]

DEPTH		DESCRIPTION
190	195	Buff dolomite, brown-gray dolomite 90-10, few specks of marcasite
195	197½	Buff dolomite, brown-gray dolomite 97-3, few specks dark-speckled dolomite, trace of dolomite, trace of marcasite [illegible]-197.5'
197½	200	Gray dark-speckled dolomite, buff dolomite 70-30, marcasite 1/10
200	205	No recovery. OIL [illegible]- 205.5'
205	207½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, some fossils, marcasite 2/10, a speck of blende
207½	210	Coarse cuttings brown dolomite and dark brown shaly limestone, some fossils, marcasite 1, few specks of blende
210	212½	Coarse cuts: dark brown dolomite, green clay 50-50, marcasite 3/10, trace of phosphate SHALY - 211.3'
212½	215	Bentonite and green shale, dark brown dolomite (coarse cuts) 80-20, marcasite 3/10 SHALS- 214.5'
215	217½	Dark brown dolomite, considerable sloughing from shale bed, marcasite 1/2
217½	220	No recovery. BESS [illegible]- 220.2'
220	223	Gray dolomitic limestone, dark brown dolomitic limestone 90-10, marcasite 3/10

T.D. : 225.0 feet, with steel tape
Water: 62 feet
Artesian: 0

Location: 340 feet east from drill hole # 9.

Geologist: R. . Davis

[illegible]

[illegible] - [illegible]

[illegible] No. 2

Property Name: [illegible] F. [illegible]
Started: Dec.11, 1953. Finished: Dec.15,1953.
Drill Owner: J. P. Robinson
Drill Runner: L. J. Brown COLLAR ELEVATION: 953.02'

FROM	TO	DESCRIPTION
0	5	Black soil
5	10	Buffish brown clay
10	15	Brown-buff clay
15	35	Buff clay
35	40	Buff dolomite, limonite 1
40	50	Dark buff dolomite, trace of limonite
50	60	Dark buff dolomite, trace of limonite
60	65	Dark buff dolomite, limonite 1/2
65	75	Buff dolomite, limonite 1/2
75	85	Buff dolomite, limonite 2/10, speck of calcite
85	90	Buff dolomite, trace of limonite, speck of calcite
90	95	Buff dolomite, brown dolomite 80-20, trace of limonite ZONE - 95'
95	100	Coarse cuts: Brown-buff dolomite, brown-buff chert [illegible]-1, limonite 2
100	105	Buff dolomite, buffish-brown chert 95-5, limonite 1
105	110	Buff dolomite, buff clay, buffish-brown chert 82-10-8, limonite 1, thin trace of galena, (loose ground)
110	115	Buff dolomite, buffish-brown chert and dark brown chert [illegible]-12, limonite 2/10, few specks of galena (loose ground)
115	120	Buff dolomite, brown chert 92-8, limonite 3/10, thin trace galena
120	125	Buff dolomite, buffish-brown chert 95-5, limonite 1/10, few specks of galena
125	130	Buff dolomite, gray-brown chert 80-20, trace of limonite, specks of galena
130	140	Buff dolomite, gray-brown chert 85-15, specks of limonite, speck of galena
140	150	Buff dolomite, gray-brown chert 88-12, few specks of limonite, few specks of marcasite
150	160	Buff dolomite, gray-brown chert and tan chert 92-8, specks of marcasite
160	170	Buff dolomite, gun and buff chert 97-3, specks of marcasite
170	175	Buffish-brown dolomite, gray chert 98-2, trace of brown clay, marcasite 2
175	180	Brown dolomite, gray, brown & tan chert 75-25, marcasite 5
180	185	Brown dolomite, gray-blue and tan chert 80-20, marcasite 3
185	190	Rather coarse cuts: Brown dolomite, marcasite 1. ZONE - 190'
190	195	Brown-gray dolomite, buff dolomite ravelling 5, marcasite 1/2
195	197½	Brown-gray dolomite, gray clay 98-2, buff dolomite ravelling 3, marcasite 3/10
197½	200	Brown-gray dolomite, marcasite 4/10
200	202½	Brown-gray dolomite, marcasite 4
202½	205	Gray-brown dolomite, marcasite 7 ZONE - 205'
205	207½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 1/2
207½	210	Gray dark-speckled dolomite, marcasite 5, blende 3/10
210	212½	Gray dark-speckled dolomite (buff dolomite and clay chips 7) marcasite 4, blende 1/10 ZONE - 212.5'

(CONTINUED ON NEXT PAGE)

[illegible] No. 23 [illegible]T.

Property name: [illegible]

[illegible]		Description
212½	215	Brown fossiliferous dolomitic limestone, marcasite 6, blende 5
215	217½	Brown fossiliferous dolomitic limestone, trace of brown clay, marcasite 4, blende 2
217½	220	Brown fossiliferous dolomitic limestone, gray clay 95-5, marcasite 2, blende 1 GLAY - 220'
220	222½	Green clay, trace of marcasite, blende and phosphate
222½	225	Coarse cuts: Brown dolomite, gray clay 95-5, marcasite 1, few specks of blende (per driller) BOTT - 224.0'
225	227½	Brown limestone and dolomitic limestone, gray dolomitic limestone 80-20, marcasite 4, blende 3/10 Bedrock - 227.0' (adjusted top 227.5')

Depth: 220.1 feet, with steel tape Soft ground: 205 - 225'(per driller)
Water: 67 feet
Assays: Yes.
Location: 100 feet south and 2[illegible] feet west from drill hole 21.

ASSAYS

		Blende	FeS_2	Galena
212½	215	7.45	9.63	0.12
215	217½	5.55	7.91	0.12
217½	220	3.70	9.41	0.12

Geologist: R. . avis

[illegible] . 24

Property Name: [illegible]
Started: Dec.16,1953. Finished: Dec. 18, 1953.
Drill Owner: J. [illegible] Robinson
Drill Runner: L.J. Brown COLLAR ELEVATION: 977.01'

FROM	TO	DESCRIPTION
0	5	Soil
5	20	Buff clay
20	25	Buff dolomite, few specks of limonite (boulders)
25	30	Buff dolomite, trace of limonite (boulders)
30	40	Buff dolomite, limonite 3
40	50	Buff dolomite, limonite 5
50	60	Buff dolomite, limonite 1
60	70	Buff dolomite, trace of limonite
70	80	Buff dolomite (some coarse cuts), few specks of limonite
80	85	Buff dolomite (sample quite muddy with ochre clay), limonite 2, trace of galena DRAW - 80'
85	90	Coarse cuts: Buff dolomite, brown chert 99-1, limonite (coarse) 8, few specks of marcasite, few specks of galena
90	95	Coarse cuts: Buff dolomite, gray-brown chert 96-4, limonite 1, speck of galena
95	100	Coarse cuts: Buff dolomite, dark brown chert and buff chert 80-20, limonite 1, galena 3
100	105	Coarse cuts: Buff dolomite, dark brown chert and buff-brown chert 75-25, limonite 3, galena 1
105	110	Buff dolomite, buff-brown, dark brown & tan chert 90-10, limonite 5, galena 1/2
110	115	Buff dolomite, buff-brown and dark brown chert 93-7, limonite 1, galena 2/10
115	120	Buff dolomite, gray and dark brown chert 95-5, limonite 1/2, trace of galena
120	130	Coarse cuts: Pale buff dolomite, light gray and white chert 92-8, limonite 2/10, galena (rove line) 1/10
130	135	No Recovery
135	140	Buff dolomite, gray chert 98-2, dark buff clay and gray clay 5%, limonite 4, galena 7/10 (ravelling ?)
140	145	Buff dolomite, gray and brown chert 92-8, dark buff clay 2, marcasite and limonite 10, trace of galena
145	155	Buff dolomite, gray chert 97-3, marcasite & limonite 12, few specks of galena
155	165	Brown-gray dolomite, light gray chert 95-5, marcasite 20, few specks of galena
165	170	No Recovery
170	175	Pale brown-gray dolomite, light gray and white chert and tan chert 88-12, marcasite & limonite 10, few specks of galena
175	180	Practically no recovery - only 4 coarse pieces of pale brown-gray dolomite
180	185	Pale brown-gray dolomite, few specks chert, marcasite 6
185	190	Pale brown-gray dolomite, marcasite 5 GRAY - 190'
190	192½	Light gray dolomite, marcasite 4
192½	195	Gray dolomite, marcasite 3
195	197½	Gray dolomite, marcasite 7
197½	207½	No Recovery DRAW - 202.5' (?)

(Continued on [illegible])

Property area: [illegible]

[illegible]		DESCRIPTION
207½	210	Gray dark-speckled dolomite, gray clay 95-5, marcasite 7, blende 1
210	212½	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 98-2, marcasite 10, blende 2 — OIL ROCK - 210'
212½	215	Brown fossiliferous dolomitic limestone, gray shaly 80-20, marcasite 5, blende 3 — TOP OF CLAY [illegible] - 214.5'
215	217½	Bentonite
217½	220	Dark brown dolomitic limestone, trace of calcite, marcasite 5, blende 1/2, a speck of galena — GLASS - 217.0'
220	222½	Light blue and tan limestone, trace of chocolate brown shale, marcasite 7, blende 1/2
222½	225	Gray dolomitic limestone, marcasite 3, blende 1/10, speck of galena — MOTTLED - 222.5'

Location: 200 feet south and 65 feet east from drill hole # 21.
T.D.: 225.5 feet, with steel tape
Water: 60 feet
Assays: yes

DRILLER'S REMARKS:

Loose streak 75 to 81 feet
Broken & loose 95 to 207½
Soft ground 207½ to 217½

ASSAYS

		Blende	FeS2	Galena
85	90	0.10	20.11	0.85
90	95	0.10	13.26	0.18
95	100	0.10	15.23	7.09
100	105	0.10	10.26	3.18
105	110	0.10	15.23	3.09
207½	210	1.90	12.41	0.12
210	212½	1.85	10.70	0.13
212½	215	2.25	12.04	0.13

15' [illegible]
[illegible]
47-48

Geologist: M. [illegible] Davis

DRILL [illegible]
THE [illegible] - [illegible] A Y

DRILL HOLE NO. 25

Property Name: CLARENCE F. ADAM
Started: Dec. 21,1953. Finished: Dec. 24,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. Brown COLLAR ELEVATION: 990.68'

FROM	TO	DESCRIPTION
0	8	Soil
8	15	Buff dolomite
15	40	Buff dolomite & buff clay (course cuts)
40	60	Buff dolomite, specks of limonite
60	80	Buff dolomite, few specks of limonite
80	85	Buff dolomite, brown dolomite 95-5, trace of limonite, specks of marcasite
85	90	Brown dolomite, buff dolomite 90-10, few specks of marcasite
90	95	Brown dolomite, trace of marcasite
95	100	Brown dolomite, speck of calcite, marcasite 1/10 DRAY - 102.5'
100	105	Buffish-brown dolomite, brown & gray-brown chert 95-5, marcasite 2/10
105	110	Buffish-brown dolomite, gray and white chert 80-20, marcasite 2/10, galena traces
110	115	Brown dolomite (some marcasite-speckled), brown & tan chert 96-4, marcasite 3/10, few specks of galena
115	120	Buffish-brown dolomite, gray-brown & tan chert 94-6, marcasite 1/2
120	130	Brown dolomite, tan chert 95-5, marcasite 3/10
130	140	Buffish-brown dolomite, gray & white chert 80-20, trace of dark brown shale, marcasite 2/10, galena 2/10
140	150	Light brown-gray dolomite, light gray & white chert 88-12, marcasite 4/10
150	160	Brown dolomite, gray chert 92-8, marcasite 1/2
160	170	Buffish-brown dolomite, gray and tan chert 88-12, marcasite 5
170	180	No recovery
180	185	Brown dolomite, few specks of tan chert, marcasite 12
185	190	No recovery
190	195	Dark brown dolomite, gray marcasite-speckled chert 90-10, marcasite 18
195	200	Dark brown dolomite, gray and brown chert 94-6, marcasite 20
200	205	Gray dolomite, brown dolomite 70-30, marcasite 15 DRAY - 201.5'
205	207½	Brown-gray dolomite, marcasite 9
207½	210	Brown-gray dolomite, marcasite 7
210	212½	New Extra course cuts: Brown-gray dolomite, marcasite 12
212½	215	Brown-gray dolomite, marcasite 22
215	217½	Brown-gray dolomite, marcasite 8 DRAY - 217.5'
217½	220	Gray dark-speckled dolomite, marcasite 6
220	222½	Gray and brown-gray dark-speckled dolomite, marcasite 5
222½	225	Brown dolomitic limestone, gray dark speckled dolomite 70-30, buff dolomite 10, marcasite 5, OIL ROCK - 223.3'
225	227½	Brown fossiliferous dolomitic limestone, trace of dark brown shale, trace of gray clay, marcasite 4, blende 2
227½	230	Brown fossiliferous dolomitic limestone, some brown clay and little gray clay, brown shale 1, marcasite 3, blende 2 CLAY-231'
230	232½	Green clay, brown fossiliferous dolomitic limestone 60-40, trace of phosphate, marcasite 2, blende 1 CLAY -234.5'
232½	235	Gray clay, dark brown sugary dolomite 80-20, marcasite 3, blende 2/10

(CONTINUED ON NEXT PAGE)

Geologist: H. [illegible] avis

[illegible] 2.

[illegible] No. 25 [illegible]'T.

Property Name: [illegible] r. [illegible]

DEPTH		DESCRIPTION
235	237½	Gray dolomitic limestone, dark brown sugary dolomite 70-30, marcasite 2, blende 2/10 McGREGOR- 235.7'
237½	240	Gray dolomitic limestone, marcasite 4, blende 3/10

T.D.: 240 feet, with steel tape
ater: 73 feet.
Assays: Yes
Location: Loc."3"; 238 feet east and 12 feet north from [illegible] ta.#175.

Broken ground and small recoveries 165-215. [illegible] oft bottom section.

ASSAY

	Blende	FeS_2	Galena
225 227½	6.42	14.33	0.12
227½ 230	3.75	10.27	0.12
230 232½	3.10	9.84	0.12

Geologist: [illegible]

[illegible] - [illegible]

[illegible] 26

Property [illegible]
Started: Dec. 24, 1953. Finished: Dec. 29, 1953.
Drill Foreman: [illegible]
Drill Operator: L. W. Brown

Collar Elev. [illegible]: 990.40
220
770 1/2

From	To	Description
0	5	Black soil
5	10	Buff clay, buff dolomite 95-5
10	15	Buff dolomite (coarse cuts), buff clay 80-20, a speck marcasite
15	20	Buff dolomite (coarse cuts), buff clay 90-10, speck of marcasite
20	25	Buff dolomite
25	30	Dark buff dolomite, few specks of galena
30	35	Dark buff dolomite, few specks limonite, specks of galena
35	40	Dark buff dolomite, few specks limonite, few specks of galena
40	50	Dark buff dolomite, few specks of galena
50	60	Dark buff dolomite, few specks of galena
60	70	Dark buff dolomite, few specks of galena
70	80	Dark buff dolomite, brown-gray dolomite 90-10, few specks galena
80	85	Brown dolomite, few specks of marcasite
85	90	Brown dolomite, few specks of marcasite
90	95	Brown dolomite, trace of marcasite
95	100	Brown dolomite, marcasite 4/10
100	105	Brown dolomite, gray-brown chert 97-3, marcasite 1/2 MAY -102.5'
105	110	Dark brown dolomite, gray-brown chert 92-8, marcasite 2/10, galena 1
110	115	Dark brown dolomite, gray marcasite-speckled chert and brown chert 90-10, marcasite 6, galena 2
115	120	Dark brown dolomite, gray marcasite-speckled chert [illegible] brown chert 96-4, marcasite 3, galena 1/2
120	125	Brown dolomite, gray chert 98-2, marcasite 3/10, few specks galena
125	130	Brown dolomite, gray chert 95-5, marcasite 3/10, few specks galena
130	140	Brown-gray dolomite, gray & white chert 92-8, marcasite 2/10
140	150	Brown-gray dolomite, gray chert 96-4, marcasite 2/10
150	160	Brown-gray dolomite & brown dolomite, gray chert 99-1, marcasite 110
160	170	Brown dolomite, tan chert 98-2, trace of marcasite
170	180	Brown dolomite, gray & tan chert 99-1, marcasite 7/10
180	190	Brown dolomite, gray marcasite-speckled chert 92-8, marcasite 3
190	200	Brown dolomite, tan and brown chert 97-3, marcasite 6
200	205	Gray dolomite, brown dolomite 80-20, marcasite 2 MAY- 201'
205	207½	Gray dolomite, trace of gray clay, marcasite 4
207½	210	Gray-brown dolomite, marcasite 3
210	212½	Brown dolomite, marcasite 1, few specks of blende
212½	215	Brown dolomite, gray coarse grained dolomite with few dark specks 90-10, some gray chert, apparently revelling, marcasite 7/10, few specks of blende LAS- 214.5'
215	217½	Gray dark-speckled dolomite, some brown dolomite and gray chert revellings, marcasite 3/10, trace of blende
217½	220	Gray dark-speckled dolomite, some brown dolomite and gray chert revelling, gray clay 2, marcasite 4/10, few specks blende MAY-220'
220	222½	Light brown fossiliferous limestone, marcasite 2/10, blende 1/10
222½	225	Brown fossiliferous limestone, brown shaly limestone 90-10, marcasite 6/10, blende 2/10
225	227½	Brown fossiliferous limestone, brown clay 95-5, marcasite 4/10, few specks of blende, specs of calcite MAY END- 227.5'

(Over)

[illegible] 2. Geologist: [illegible]

[illegible]

Property [illegible]

Depth	Description
227½-230	Green clay
230-232½	Dark brown dolomite (coarse cuts), green clay 95-5, carbonate 1/10, speck of galeite
	LAST ROCK - 231.5' (per driller)
232½-235	Dark brown dolomite and little brown dolomitic limestone, carbonate 2/10, speck of galeite
235-237	Gray dolomitic limestone, few specks brown dolomite, carbonate 1/10, a speck of blende
	LAST ROCK - 235'

Total 237.4 feet, with steel tape
Water: 73½ feet
Assays: low (some galena 105-115)
Broken ground 170-200
Soft ground 215-230
6½ inch hole.
Location: North 62° West 100 feet from Drill Hole #23.

ASSAY

	Blende	FeS_2	Galena
105-110	Nil	3.65	0.05
110-115	Nil	5.56	0.03

Geologist: R. . Davis

DRILL LOG

[illegible] COUNTY

Drill No. 27

Property Name: CLARENCE F. SMITH
Started: Dec.30,1953. Finished: Jan.4,1954.
Drill Owner: J. F. Robinson
Drill Runner: L.J. Brown

COLLAR ELEVATION: 992.10'
LOCATION: 100' N. from DH #8

FROM	TO	DESCRIPTION
0	6	Soil
6	10	Light buff dolomite, few specks of gray dolomite
10	20	Light buff dolomite
20	50	Buff dolomite
50	85	Dark buff dolomite
85	90	Dark buff to buffish-brown dolomite, few specks marcasite, blende and galena
90	95	Dark buff & buffish-brown dolomite, thin trace of marcasite, speck of blende
95	100	Brown-buff dolomite, marcasite 1/10
100	105	Brown dolomite, brown chert 95-5, marcasite 1/10 DRAW-102.5'
105	110	Light brown dolomite, white chert 94-6, marcasite 4/10, a speck of blende
110	120	Brown dolomite, brown and marcasite-speckled chert 93-7, marcasite 2, specks of blende and galena
120	130	Brown dolomite, brown-gray chert 96-4, marcasite 1, a speck of blende and galena
130	140	Brown dolomite, light gray chert 95-5, marcasite 1 1/2
140	150	Gray-brown dolomite, few specks tan chert, marcasite 1/2
150	160	Gray-brown dolomite, light brown-gray chert 97-3, marcasite 4/10
160	170	Brown dolomite, tan chert 94-6, marcasite 3/10
170	180	Brown dolomite, trace of tanchert , marcasite 3/10
180	190	Brown dolomite, tan chert 96-4, marcasite 2
190	195	Brown dolomite, tan & brown chert 95-5, marcasite 2
195	200	Brown dolomite, tan chert 97-3, marcasite 4
200	205	No recovery GRAY- 205'
205	210	Very small recovery: Gray dolomite, gray clay 98-2, marcasite 4
210	212½	No recovery
212½	215	Gray dolomite, marcasite 7
215	217½	Brown-gray marcasite speckled dolomite, marcasite 10, few specks of blende
217½	220	Brown- gray dolomite (slightly marcasite-speckled), marcasite 20, blende 1 (?)
220	222½	Brown-gray dolomite (slightly marcasite-speckled), gray clay 95-5, marcasite 12, blende 1 BLUE- 220'
222½	225	Dark brown-gray dolomite (slightly marcasite-speckled), gray clay 3, marcasite 5, blende 2
225	227½	Dark brown-gray dolomite, brown dolomitic limestone 80-20, (some buff dolomite revelling), marcasite 6, blende 2 COAL ROCK-227.0'
227½	230	Light brown fossiliferous dolomitic limestone, trace of brown shale, marcasite 7, blende 2
230	232½	Light brown fossiliferous dolomitic limestone, brown shale 2, marcasite 4, blende 1 GRAY- 232.5'
232½	235	Green clay, marcasite 1/2, few coarse crystals of blende
235	237½	Dark brown dolomite (coarse cuts) 80-20, marcasite 2/10, speck blende
237½	240	Dark brown dolomite, gray dolomitic limestone 90-10, specks calcite, marcasite 5, blende 1/2 McGREGOR-239.8' GRAY-237'

T.D.: 240.3', with steel tape.
Water: 75 feet.
Sprays: Yes

([illegible] No. 47 [illegible].)

Property Name: [illegible] U.T.H.

A S S A Y S

		Blende	FeS2	Galena
215	217½	0.20	9.20	Trace
217½	220	0.52	10.19	"
220	222½	0.02	11.77	"
222½	225	1. 5	8.56	"
225	227½	1.15	7.70	"
227½	230	1.12	6.42	"
230	232½	0.35	4.06	"

Geological [illegible]

Property [illegible]
Started: Jan. [illegible], 1954. Finished: Jan.7, 1954.
Drill [illegible]: [illegible] Robinson
Drill [illegible]: L. J. Cown

[illegible] 947.26'
[illegible] 500 [illegible] 345 feet from drill hole #1.

[illegible]	[illegible]	DESCRIPTION	[illegible]
0	10	[illegible] brown clay	
10	19	Brown-buff clay	
19	25	Buff dolomite, trace of limonite	
25	35	Buff dolomite, trace of limonite	
35	40	Brown-buff dolomite, few specks brown chert, a trace of limonite	
40	45	Brown-buff dolomite, brown chert 95-5	MAX - 40'
45	50	Brown-buff dolomite, brown & gray-brown chert 92-8, marcasite	1/10
50	60	Brown dolomite, gray-brown chert 95-5, marcasite	1/10
60	70	Brown dolomite, gray chert 9[illegible]-8, marcasite	2
70	[illegible]	Light gray dolomite, light gray chert 91-9, marcasite	[illegible]
[illegible]	[illegible]	Light brown dolomite, light gray and [illegible]-brown chert 88-12, marcasite 5	
90	100	Brown dolomite, gray-brown [illegible] marcasite-speckled chert 97-3, marcasite 4	
100	110	Brown dolomite, gray [illegible] marcasite-speckled chert [illegible]7-3, marcasite [illegible]	
110	120	Brown dolomite, dark buff clay, gray [illegible] marcasite-speckled chert [illegible]-7-3, marcasite 7	
120	[illegible]	No recovery	
[illegible]	130	Brown dolomite, gray [illegible] marcasite-speckled chert 90-10, marcasite 5	
130	135	Brown dolomite, gray [illegible] marcasite-speckled chert [illegible]-35, marcasite [illegible]	
135	140	Gray dolomite, brown dolomite 90-10, marcasite [illegible]	MAX-135.5'
140	142½	Brown-gray dolomite, marcasite 6	
142½	145	Brown-gray dolomite, marcasite 5	
145	147½	Brown-gray dolomite, gray dark-speckled dolomite [illegible]-5, dark buff clay 3, marcasite 7	
147½	150	Brown-gray dolomite, few [illegible] gray dark-speckled dolomite, trace of dark buff clay, marcasite [illegible]	[illegible] - 150'
150	152½	Gray dark-speckled dolomite, marcasite 12	
152½	155	Gray dark-speckled dolomite, gray clay traces, marcasite 6	
155	157½	Brown fossiliferous dolomitic limestone and trace shale, marcasite 10, a speck of galena	[illegible] - 155.0'
157'	160	Coarse cuts: dark brown dolomite (junky), marcasite 4	
160	162½	Green clay, dark brown dolomite 80-20, marcasite 1	[illegible]-160.5'
162½	165	Green clay and [illegible] dolomite, few coarse cuts light brown dolomite, trace of marcasite	[illegible] - 165'
165	167½	Light brown dolomite, gray dolomitic limestone [illegible], marcasite	1/2
167	170	Brown-gray dolomitic limestone, marcasite 2	[illegible] - 1[illegible]'

[illegible]: 170.[illegible] feet, with [illegible] core
[illegible]: [illegible] feet
[illegible]: 0

[illegible]: [illegible] Broken ground 85 to 155 feet; lost considerable amounts of most cuts

Oil hook and Glass hook are soft.

Geologist: L. . avis.

[illegible]

[illegible] - [illegible]Y

Property Name: [illegible] P. [illegible]
Started: Jan.7,1954. Finished: Jan.9,1954. COLLAR ELEV. ABT: 945.82'
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown.

LOCATION: L. 50° R. 75' from DH # 28.

DEPTH		DESCRIPTION
0	20	Buffish-brown clay
20	25	Dark buff dolomite, limonite & marcasite 2/10
25	30	Dark buff dolomite, limonite & marcasite 1/10
30	35	Dark buff dolomite, trace of limonite
35	40	Dark buff dolomite, trace of limonite
40	45	Dark buff dolomite & brown dolomite 50-50, gray chert 5, marcasite 1/10
		DRAIN- 42.5'
45	50	Brown & dark buff dolomite, marcasite-speckled chert and brown chert 80-20, marcasite 4
50	55	Brown dolomite, gray-brown chert 97-3, marcasite 1
55	60	Buffish-brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 4
60	65	Brown dolomite, gray marcasite speckled chert 82-18, marcasite 8
65	70	Brown-gray dolomite, gray marcasite speckled chert 95-5, marcasite 10
70-	75	Gray dolomite, light gray chert 96-4, marcasite 7
75	80	Brown-gray dolomite, light gray chert 95-5, marcasite 8
80	90	Brown-gray dolomite, gray chert 95-5, marcasite 8
90	100	Brown dolomite, tan and marcasite-speckled chert 98-2, marcasite 6
100	110	Brown dolomite, tan and marcasite speckled chert 97-3, marcasite 8
110	125	No recoveries
125	130	Brown dolomite, marcasite-speckled chert and brown chert 85-15, marcasite 1
130	135	Brown dolomite, gray dolomite 90-10, trace of chert, marcasite 3
135	137½	Gray dolomite, marcasite 6
		DRAIN- 135.5'
137½	140	Brown-gray dolomite, marcasite 5
140	142½	No recovery
142½	145	Brown-gray dolomite, marcasite 5
145	147½	Brown-gray dolomite, marcasite 10
		BRK- 150'
147½	150	Brown-gray dolomite (some coarse cuts), buff clay 3, marcasite 6
150	152½	Gray dark speckled dolomite, gray clay 70-30, marcasite 8
152½	155	Gray dark speckled dolomite, trace of gray clay, marcasite 8
155	157½	Light brown fossiliferous dolomitic limestone, gray dark speckled dolomite 80-20, marcasite 7
		OIL BRK- 155.5'
157½	160	Green clay, brown fossiliferous dolomitic limestone 60-40, marcasite 4, trace of phosphate, a piece of blende
		CLAY BRK- 158.5'
160	162½	Bentonite
162½	165	Light brown dolomite, gray marcasite-speckled dolomitic limestone 80-20, trace of calcite, marcasite 10.
		OIL BRK- 162.5'
		COAL BRK- 164.5'

Total 165.5 feet, with steel tape
Water: at 39 feet
Assays: No.

(Adjust 'tops' down 1½ feet)

DRILL REPORT Geologist: H. [illegible] Davis
THE [illegible]OLF-FICHER COMPANY

DRILL HOLE NO. 30

Property Name: CLARENCE P. RALPH
Started: Jan.11,1954. Finished: Jan.13,1954.
Drill Owner: J. F.Robinson COLLAR ELEVATION: 949.27'
Drill Runner: L.J.Brown LOCATION: 150' N. from DH #28

DEPTH		DESCRIPTION
0	20	Buffish-brown clay
20	25	Buff dolomite, trace of limonite
25	30	Buff dolomite, few specks of limonite
30	35	Buff dolomite
35	40	Brown-buff dolomite, few specks brown chert DRAB- 40'
40	45	Brown-buff dolomite, gray, brown & tan chert 88-12, trace of marcasite, a speck of galena
45	50	Dark brown-buff dolomite, dark brown chert 85-15, few specks of limonite and marcasite
50	60	Brown dolomite, gray chert 93-7, trace of brown chert, marcasite 2/10, trace of galena
60	65	Brown dolomite, gray chert 96-4, marcasite 2/10
65	70	Light brown-gray dolomite, light gray and white chert 90-10, considerable buff clay (probably sloughing), trace of marcasite
70	80	Light brown-gray dolomite (rather course cuts), light gray and white chert 93-7, buff dolomite 3, few specks of marcasite
80	90	Brown-gray dolomite, light gray to gray chert 95-5, marcasite 3/10, some buff clay, probably sloughing.
90	100	Brown dolomite, gray-brown & tan chert 99-1, few specks marcasite
100	110	Brown dolomite, trace of tan & gray chert, marcasite 1/10
110	120	Brown dolomite, gray marcasite-speckled chert 92-8, rusty clay 1, marcasite 5
120	125	Brown dolomite, gray-brown & marcasite speckled chert 80-20, marcasite 2
125	130	Brown dolomite, few specks gray-brown chert, marcasite 2/10
130	135	Brown-gray dolomite, marcasite 1/2 GRAY- 130'
135	137½	Brown-gray dolomite, marcasite 2/10
137½	140	Brown-gray dolomite (coarse cuts), trace of marcasite
140	142½	Gray-brown dolomite, marcasite 1/10
142½	145	Gray-brown dolomite, trace of gray clay, marcasite 2/10
145	147½	Dark gray dark speckled dolomite, marcasite 1/10 BLUE- 145'
147½	150	Dark gray dark speckled dolomite (coarse cuts), marcasite 1/10
150	152½	Brown dolomitic limestone, gray dark speckled dolomite 97-3, marcasite 1/10, a speck of blende OIL ROCK- 150.0'
152½	155	Coarse cuts: Dark brown dolomitic limestone, few fossils, marcasite 1/10, a speck of blende
155	157½	Brown dolomitic limestone, gray dark fossiliferous speckled dolomitic limestone 90-10, marcasite 2/10, few specks blende
157½	160	Gray clay & brown-gray dark fossiliferous-speckled dolomitic limestone, marcasite 3/10 CLAY BED- 157.5'
160	162½	Gray clay, light brown dolomite 60-40 (coarse cuts), marcasite 2/10
162½	165	Light brown dolomite, marcasite 1/10 GLASS ROCK-161.5'
165	167½	Light brown dolomite, few specks chocolate brown shale, calcite 2, marcasite 2/10
167½	170	Brown dolomite, gray dolomitic limestone 60-40, marcasite 2/10 McGREGOR- 169.0'

T.D.N: 169.5 feet, with steel tape
Water: At 42 feet
Assays: No

DRILL RECORD
THE EAGLE-PICHER COMPANY

Geologist: H. G. Davis

Property Name: CLARENCE P. RALPH
Started: Feb.2,1954. Finished: Feb.4,1954.
Drill Owner: J.F.Robinson
Drill Runner: L.J.Brown

DRILL HOLE NO. 31

COLLAR ELEVATION: 940.20'

LOCATION: 300' E. & 50' N. from DR #28.

DEPTH		DESCRIPTION
0	14	Buffish brown clay
14	20	Buff dolomite
20	25	Brown-buff dolomite
25	30	Brown-buff dolomite, gray chert 95-5
30	35	Buffish-brown dolomite, gray chert 96-4, trace of marcasite — DRAB- 27.5'
35	40	Brown dolomite, gray chert 94-6, few specks brown and tan chert, marcasite 1/10
40	50	Brown dolomite, gray and tan chert 97-3, trace of marcasite
50	60	Gray dolomite, white chert 92-8, trace of marcasite
60	70	Brown-gray dolomite, white chert 93-7, few specks of marcasite
70	80	Gray-brown dolomite, gray chert 92-8, trace of dusty brown clay, trace of buff dolomite, thin trace of marcasite
80	90	Brown dolomite, tan chert 95-5, marcasite 1/10
90	100	Brown dolomite, tan chert 99-1, marcasite 3/10
100	110	Dark brown dolomite, marcasite speckled chert 75-25, rusty clay 1, marcasite 2
110	115	Dark brown dolomite, brown-gray chert 98-2, marcasite 1
115	120	Gray dolomite, marcasite 3/10
120	122½	Gray dolomite, marcasite 2/10 — GRAY- 115'
122½	125	Brown-gray dolomite, trace of rusty clay, marcasite 1/10
125	127½	Brown-gray dolomite, marcasite 1/10
127½	130	Gray dark speckled dolomite, brown-gray dolomite 60-40, trace of marcasite — BLUE- 128.5'
130	132½	Dark gray dark speckled dolomite, marcasite 1/10
132½	135	Gray dark speckled dolomite, marcasite 4/10
135	137½	Brown dolomitic limestone, gray dark speckled dolomite 90-10, marcasite 2/10 — OIL ROCK- 135.3'
137½	140	Brown dolomitic limestone, dark brown shale 90-10, marcasite 2/10
140	142½	Brown dolomitic limestone, marcasite 1/10
142½	145	Brown dolomitic limestone, marcasite 1/10
145	147½	Brown dolomitic limestone, gray dolomitic limestone with dark specks 70-30, trace of marcasite
147½	150	Dark gray fossiliferous limestone and green shale, brown-gray dolomite 80-20, marcasite 1/10 — CLAY - 148'
150	152½	Coarse cuts: Dark brown dolomite, specks of calcite, marcasite 1/10 — GLASS- 150'
152½	155	Coarse cuts: Dark brown dolomite, specks of calcite, marcasite 1/10
155	157½	Brown dolomite, chocolate brown shale 95-5, marcasite 1/10
157½	160	Gray dolomitic limestone, brown dolomite 98-2, trace of marcasite — McGREGOR- 157.5'

T.D.M: 160.0 feet, with steel tape

Water: At 31 feet

Assays: No

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: WILLIAM F. SNYDER
Began: 11-14-52 Finished: 11-18-52
Drill Owner: Swalley Estate
Drill Runner: David Taylor

DEPTH From	To	DESCRIPTION
0	5	Buff clay
5	20	Ochre clay
20	25	Ochre clay, trace gray-brown chert
25	30	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, trace limonite
30	35	Buff dolomite, gray-brown chert 94-6, trace limonite
35	40	Buff dolomite, gray-brown chert 93-7, trace limonite
40	45	Buff dolomite, trace gray-brown chert, a speck red chert, a speck limonite
45	50	Buff dolomite, gray-brown & tan chert 98-2, a speck limonite
50	55	Buff dolomite, gray-brown & tan chert 92-8, a speck limonite
55	60	Buff dolomite, tan chert 96-4, trace limonite
60	65	Buff dolomite, & brown-buff dolomite, gray-brown & tan chert 95-5, few specks red chert, trace limonite
65	70	Buff dolomite, tan, gray-brown & red chert 91-9, trace red-buff clay
70	75	Buff dolomite, tan, gray-brown & buff chert 93-7, red-brown clay 2
75	80	Coarse cuttings: brown-buff dolomite, tan, gray-brown & buff chert 88-12, buff clay 1
80	85	Buff dolomite, tan, gray-brown & buff chert 96-4, red-brown clay 2, buff clay 1
85	90	Buff dolomite, gray-brown & tan chert 98-2, red-brown clay 1
90	95	Buff dolomite, tan & buff chert 97-3, red-brown clay 5, trace dark gray clay
95	100	Buff dolomite, tan & gray chert 99-1, trace red-brown clay
100	105	Buff dolomite, tan & gray-brown chert 96-4, red-brown clay 4
105	110	Gray-buff dolomite, tan & gray chert 97-3
110	115	Dark buff dolomite, dark buff clay 70-30, trace tan chert (dolomite was limonite-speckled) BLUE - 110?
115	117½	Brown-gray dolomite limestone, tan fossiliferous limestone, dark buff limonite-speckled dolomite 80-15-5, marcasite 3/10 OIL - 117
117½	120	Pale brown limestone, dark brown dolomite 1, few fossils, marcasite 3/10
120	122½	Pale brown limestone, dark brown shaly limestone 97-3, marcasite 2/10
122½	125	Pale brown limestone, green clay 60-40, trace phosphate, marcasite ½ CLAY - 124
125	127½	Brown dolomite, calcite 3, trace gray clay, marcasite 1 GLASS - 125½

(Continued on next page)

Property Name: WILLIAM F. SNYDER

From	To	
127½	130	Brown dolomite, gray dolomitic limestone 95-5, buff dolomitic ravellings 8, marcasite ½
130	132½	Ravellings from overlying beds, gray dolomitic limestone 75-25, marcasite 1/10 MoOBSCOR - 129.9

Total depth measured 133.0' with steel tape.
Water at 63'

Very loose hole; set 105' of small pipe and drilled from 105 to 132½ with small tools.

Land Description: Northwest ¼ of Southeast ¼, Twnsp 2 North, Rng 1 East

Location of Hole: 450' South & 260' East from center of Section

Wisconsin

Geologist: H. W. Davis

DRILL RECORD

The Eagle Picher Company

Property Name: Wm. F. Snyder
Began: 11-19-52, finished 11-21-52
Drill Owner: Swalley Estate
Drill Runner: D. Taylor

Hole No. 3
Total Depth 105
Water 39½

Elev. _____

From	To	
0	5	Soil
5	10	Dark brown/buff clay-buff & red chert 95-5
10	15	Dark brown/buff clay-buff, brown, & red chert 92-8, limonite ½
15	20	Buff dolomite-buff, brown, red & tan chert 80-40, a little brown/buff clay, limonite 1/10
20	25	Buff dolomite-tan & gray/brown chert (coarse) 75-25, brown/buff clay 10, trace limonite
25	30	Buff dolomite-tan & gray/brown chert 96-4, (a few coarse cuttings)
30	35	Buff & dark buff dolomite-tan & gray/brown chert 92-8, trace brown/buff clay (few coarse cuttings)
35	40	Buff & dark buff dolomite-trace tan chert (some coarse cuttings)
40	45	Dark buff dolomite-tan & gray/brown chert 95-5 (coarse cuttings)
45	50	Buff & dark buff dolomite-tan & gray/brown chert 85-15 (coarse cuttings)
50	55	Buff dolomite-tan, gray/brown & buff chert 60-40 (coarse cuts.)
55	60	Dark buff dolomite-tan, gray/brown & buff chert 85-15, (fairly coarse cuttings)
60	65	Dark buff dolomite-tan, gray/brown & buff chert 88-12, trace brown clay (fairly coarse cuttings) GRAY 65 ?
65	70	Dark buff dolomite-tan, gray/brown & buff chert 80-20, brown clay 3 (fairly coarse cuttings)
70	75	Buff & dark buff dolomite-tan & gray/brown chert 80-20 (extra coarse cuttings)
75	80	Buff dolomite-gray/brown & tan chert 80-10, buff clay 10 (coarse cuttings) BLUE 80 ?
80	82½	Dark buff dolomite-gray/brown & tan chert 80-20, dark brown dolomitic limestone 10 (coarse cuttings)
82½	85	Dark buff dolomite-gray/brown & tan chert 60-40, dark brown dolomitic limestone 15
85	87½	Buff dolomite-gray/brown & tan chert 75-35, trace red chert, dark brown dolomitic limestone 30, buff clay 5 (extra coarse cuttings) BIT 87½ ?
87½	90	Dark buff dolomite-tan & gray/brown chert 95-5, brown clay 10, trace quartz (extra coarse)
90	92½	Dark buff dolomite-tan chert 90-10, dark brown shale 10, brown clay 2, a speck quartz, few fossils, thin trace marcasite
92½	95	Blue shale-brown shale 60-40, dark buff dolomite 20, tan & gray/brown chert 8, trace phosphate, trace marcasite
95	97½	Buff clay, buff dolomite & chert ravellings 80, green clay & blue shale 20, thin trace marcasite CLAY 97½ ?
97½	100	Ravellings from overlying beds-brown limestone (Galesbrook) 99-1, few specks marcasite
100	102½	Dark brown limestone-dark buff dolomite & buff clay 70-30, dark brown shale 2 (coarse cuttings) McGregor 102½
102½	105	Gray dolomitic limestone-brown limestone 95-5, dark buff dolomitic ravellings 10 (Extremely soft hole; impossible to pick any 'tops' excepting McGregor with any degree of accuracy

Land Description: NW/SE-SW-SW

Wisconsin

Geologist: F. W. Davis

DRILL RECORD

(RCA) Hole No. 4

The Davis-Ficker Company

Property Name: W. F. [illegible]

Total Depth 135'

Began: 11-21-52 Finished: 11-24-52

Water 77'

Drill Owner: Dwalley Bat.

Drill Runner: W. Taylor

Elevation _____

Depth From	Depth To	
0	5	Soil and buff clay
5	10	Buff clay
10	15	Brown/gray clay
15	20	Dark brown/gray clay
20	25	Buffish/gray clay-some coarse pieces brown chert
25	30	Buffish/gray clay-few pieces gray/brown chert
30	35	Gray and buffish/gray clay, trace chert
35	40	Dark buff clay-buff chert 95-5
40	45	Dark buff dolomite-gray/brown and buff chert 80-20, little buff clay, trace limestone (CHAT TR)
45	50	Buff dolomite-gray/brown and dark buff chert 65-35, trace limonite
50	55	Buff dolomite-gray brown chert 85-15, trace tan chert, few specks limonite
55	60	Buff dolomite-gray/brown tan and buff chert 88-12, few specks limonite
60	65	Dark buff dolomite-gray/brown and tan chert 94-6, a speck limonite
65	70	Dark buff dolomite-gray brown chert 97-3, a speck limonite
70	75	Dark buff dolomite-gray/brown chert 92-8
75	80	Dark buff dolomite and brown/buff dolomite-gray/brown chert 94-6, trace tan chert
80	85	Buff dolomite-light gray brown, tan and buff chert 80-20
85	90	Buff dolomite-buffish/tan and gray brown chert 88-12
90	95	Buff dolomite-tan chert 97-3
95	100	Buff dolomite-tan chert 99-1
100	105	Buff dolomite-gray dolomite 80-20, trace dark buff clay, a speck marcasite CHAT - 100
105	107½	Buff dolomite-gray dolomite 80-20, gray clay 2, a speck marcasite
107½	110	Gray dolomite-buff dolomite 60-40, a speck marcasite
110	112½	Gray dolomite-buff dolomite 80-20, trace marcasite CHAT - 112½
112½	115	Gray dark/speckled dolomite-buff dolomite 70-30, marcasite 1/10
115	117½	Dark gray dark speckled dolomite, trace buff dolomite-trace marcasite
117½	120	Buff dolomite-gray dark speckled dolomite 70-30, trace calcite, trace marcasite
120	122½	Brown dolomitic limestone-gray dark speckled dolomite-buff dolomite 70-20-5, trace marcasite ~~CHAT - 120.5~~
122½	125	Light brown dolomitic limestone-brown ~~shaly limestone~~ 98-2, marcasite 1/10
125	127½	Brown dolomitic limestone-brown shaly limestone 80-20, trace gray clay, trace marcasite
127½	130	Green clay-gray/brown dolomitic limestone 80-20, marcasite 2/10, few specks phosphate CHAT - 128 CHAT - 130
130	132½	CHAT BATCH: Pale brown dolomite-trace calcite, ~~trace marcasite~~
132½	135	BROWN CHAT BATCH: Gray dolomitic limestone, trace marcasite NO CHAT - 132½
77'	135'	w a t

Land Description: [illegible]/[illegible] 23 N

Location of Hole 800' N. and 250' E from [illegible] corner of [illegible] of Sec.

Geologist: Harold W. Davis

Secret

DRILL LOGS
The Eagle-Picher Company

HOLE NO. 5

Property Name: WM. F. SNYDER
Began: 12-1-52 Finished: 12-3-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	5	Soil & buff clay
5	15	Brown-buff clay
15	20	Buff clay
20	25	Dark buff clay, few specks limonite
25	30	Extra Coarse Cuttings: Buff dolomite, brown & tan chert, buff clay 80-10-10, few specks limonite
30	35	Buff clay, buff dolomite (coarse cuttings), brown & tan chert 80-15-5, few specks limonite
35	40	Buff clay, buff dolomite (coarse cuttings), brown & tan chert (coarse cuttings) 60-25-15, a speck limonite
40	45	Extra Coarse Cuttings: Buff dolomite, brown chert 50-50
45	50	Coarse Cuttings: Buff limonite-speckled dolomite, brown & tan chert 80-20
50	55	Coarse cuttings: Dark buff dolomite, brown & tan chert 75-25
55	60	Coarse cuttings: Buff dolomite, brown, tan & buff chert 85-15
60	65	Buff dolomite, brown & buff chert 95-5, trace limonite
65	70	Buff dolomite & dark buff limonite-speckled dolomite, gray-brown chert 96-4, few specks limonite
70	75	Buff dolomite & dark buff dolomite, gray-brown & tan chert 88-12, few specks limonite
75	80	Buff dolomite, tan & gray-brown chert 82-18, few specks limonite
80	85	Buff dolomite, tan & gray-brown chert 88-12
85	90	Buff dolomite, tan & light gray-brown chert 92-8, trace gray-brown cave clay
90	95	Dark buff limonite-speckled dolomite, tan & gray-brown chert 93-7, trace fossils
95	100	Buff & dark buff limonite-speckled dolomite, trace tan chert, trace fossils
100	105	Buff & dark buff dolomite, few specks tan chert, few specks limonite
105	110	Gray-buff dolomite, chert ravellings 15 GRAY ??????
110	115	Gray-buff dolomite, chert ravellings 5 BLUE ??????
115	120	Brown dolomitic limestone, buff dolomitic ravellings 90-10, trace dark brown shale, trace gray dark-speckled dolomite, marcasite 1/10 OIL - 115.0
120	122½	Brown fossiliferous dolomitic limestone, dark buff dolomite 95-5, brown clay 1, trace marcasite
122½	125	Green clay & dark baritic fossiliferous limestone, trace phosphate, marcasite 3/10 CLAY - 122.5

(Continued on next page)

Geologist: Harold W. Davis

Hole No. 5
Continued

Property Name: WM. F. SNYDER

From	To	
125	127½	Dark brown limestone, dark buff dolomitic ravellings (Coarse cuttings) 60-40, trace marcasite GLASS - 125.0
127½	130	Gray dolomitic limestone, dark brown dolomitic limestone 80-20, some buff dolomitic ravellings, trace marcasite McGREGOR - 126.0

Total depth measured 130.0 with steel tape.
Water at 66'

Land Description: Southwest ¼ of Southeast ¼, Twnsp 2 North, Rng 1 East

Location of Hole: 200' North & 300' West from Southeast corner of Southwest ¼ of Southeast ¼

Geologist: E. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: ARNOLD J. SPLINTER
Began: 10-13-52, finished 10-17-52
Drill Owner: J. F. Robinson
Drill Runner: Ol. Wallace

Hole No. 2
Total Depth 147½

Elev. 1017.5
142
875

From	To	
0	5	Brown soil
5	10	Buff clay
10	30	Buffish/brown clay
30	35	Buff clay-buff dolomite 98-2, limonite ½
35	40	Coarse cuttings: Light buff dolomite-gray/brown & tan chert 98-2, limonite ½
40	45	Coarse cuttings: Light buff dolomite-gray/brown chert 92-8, limonite 4/10
45	50	Coarse cuttings: Light buff dolomite-tan chert 95-5, limonite 3/10
50	55	Light buff dolomite-light gray chert 90-10, limonite 1/10
55	60	Light buff dolomite-light gray chert 99-1, limonite 2/10
60	70	Buff dolomite-gray/brown & tan chert 88-12, limonite 1
70	75	Buff dolomite-tan chert 85-15, limonite 2/10
75	80	Few extra coarse cuttings: Buff dolomite-tan chert 97-3, limonite 4/10
80	85	Buff dolomite-tan chert 96-4, limonite 2/10
85	90	Coarse cuttings: Buff dolomite-tan chert 97-3, limonite 1
90	95	Buff dolomite-tan chert 98-2, trace fossils, limonite 5
95	100	Coarse cuttings: Buff dolomite-tan & gray/brown chert 60-40, limonite 7
100	105	Coarse cuttings: Buff dolomite-tan chert 94-6, limonite 2
105	107½	Coarse cuttings: Buff dolomite-tan chert 88-12, limonite 4
107½	110	Extra coarse cuttings: Buff dolomite-tan & gray/brown chert 50-50, limonite 3
110	112½	Extra coarse cuttings: Buff dolomite-tan & gray/brown chert 60-40, limonite 8
112½	115	Some coarse cuttings: Buff dolomite-gray/brown chert 98-2, limonite 6
115	117½	Fine cuttings: Buff dolomite-few specks chert, limonite 2
117½	120	Buff dolomite-tan & gray/brown chert 97-3, limonite 2, few specks marcasite
120	122½	Buff dolomite-trace tan chert-red/brown crevice clay 1, limonite 1
122½	125	Buff dolomite-red/brown crevice clay, limonite 3/10
125	127½	Buff dolomite-trace green clay, limonite 1/10 GRAY 125
127½	130	Buff dolomite-limonite ½
130	132½	Buff calcareous dolomite-gray/buff dolomite-trace red/brown crevice clay, limonite 2/10
132½	135	Coarse cuttings: Buff & gray/buff calcareous dolomite-limonite 4/10 (coarse)
135	137½	Some coarse cuttings: Gray/buff dolomite & buff dolomite-trace crevice clay, trace calcite, few fossils, limonite 1/10
137½	140	Buff dolomite-gray dark/speckled dolomite 5, trace calcite, limonite 1/10 BLUE 139
140	142½	Buff dolomite-gray dark/speckled dolomite & gray clay 70-30, limonite 1/10, trace marcasite OIL none
142½	145	Buff dolomite-gray dark/speckled dolomite-green clay 90-5-5, few specks phosphate, trace brown clay

(Continued on next page)

Property Name: ARNOLD J. SPRINTER

Hole No. 2
(Continued)

From	To	
145	147½	Buff dol mite-gray dark/speckled dolomite ravellings-bentonite, trace dark brown dolomite (glass), marcasite 4/10

CLAYBED 144½ ?
GLASSROCK 148 ?
ESTIMATED MOOPTOOR 150 ?

Hole stopped due to extreme looseness of formations.
Impossible to measure it. Water at 77 feet.
Hole was advanced to about 149 feet and it caved.full to 25 feet from bottom.

Driller's remarks: Set 32 feet of 8" casing.
Fairly solid 35 to 40
Soft 42 to 45
Real hard 45 to 50
Wit water 70 to 75
Sand caving in 85 to 95
Real loose 103 to 119
Set small casing to 120
Strong flow water at 132½
Loose & caving badly 120 to 130
Hole filled up 30 feet while drilling 147½-150 cut.

Land Description: NW/NW 2N-1E

Location of Hole: 300' S & 300' E. of NW corner of NW qtr.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 6

Property Name: ARNOLD J. SPLINTER
Began: 10-18-52 Finished: 10-22-52
Drill Owner: John F. Robinson
Drill Runner: G. Wallace

1910.27
130
1840

LEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Brown & buff clay
10	15	Light brown clay
15	20	Brown clay, trace tan chert
20	25	Brown & dark buff clay, buff chert 5
25	30	Dark buff clay, buff chert 2
30	35	Dark buff dolomite, buff chert 96-4
35	40	Light gray chert (coarse), buff dolomite 50-40
40	45	Buff dolomite, light gray chert 80-20
45	50	Buff dolomite, light gray chert 90-10
50	60	Buff dolomite, light gray & gray-brown chert 90-10
60	70	Buff dolomite, light gray & tan chert 96-4
70	75	Buff dolomite, light gray chert 98-2, (a few coarse cuttings)
75	80	Coarse cuttings: buff & dark buff dolomite, buff & gray-brown chert 99-1
80	90	Coarse cuttings: buff dolomite, buff & gray-brown chert 80-20
90	100	Some extra coarse cuttings: buff dolomite, tan & gray-brown chert 85-15, trace red-brown clay, trace dark gray clay
100	102½	Extracoarse cuttings: buff dolomite, gray-brown chert 97-3
102½	105	Coarse cuttings: buff dolomite, gray-brown chert 94-6
105	107½	Extra coarse cuttings: buff dolomite, gray & tan chert 95-5
107½	110	A few extra coarse cuttings: buff & dark buff dolomite, gray & tan chert 96-4, red-brown clay 2, gray-buff dolomite 5 SHAY- 109½
110	112½	Extra coarse cuttings: dark buff dolomite, tan chert 92-8, red-brown clay ½
112½	115	Coarse cuttings: buff dolomite, tan & gray-brown chert 80-20 red-brown clay 1
115	117½	Coarse cuttings: dark buff dolomite, tan chert 75-25, trace red-brown clay
117½	120	Coarse cuttings: buff dolomite, tan & gray-brown chert 65-35
120	122½	Fine cuttings: buff dolomite, buff clay 80-20, tan chert 3, red-brown clay 3
122½	125	Coarse cuttings: dark buff dolomite, tan chert 82-18, some dark-speckled dolomite, trace fossils BLUE - 122½
125	127½	Coarse cuttings: dark buff dark-speckled dolomite, tan chert 80-20, trace sand
127½	130	Coarse cuttings: buff dolomite, dark buff dark-speckled dolomite, tan chert 50-40-10, some fossils, gray-buff clay 5
130	132½	Coarse cuttings: buff dolomite & tan chert ravellings, tan fossiliferous limestone, some buff dark-speckled dolomite, trace brown shale, few specks marcasite OIL - 130
132½	135	Green clay, little buff dolomite & chert ravellings, some fossils, trace phosphate, thin trace marcasite CLAY - 134

(Continued on next page)

Property Name: ARNOLD J. SPLINTER

From	To	
135	137½	Bentonite & green shale, considerable buff dolomitic ravellings, some fossils, marcasite 3/10
137½	140	Buff dolomitic ravellings, brown limestone (GLASSROCK) 97-3, some green clay sloughing, trace marcasite GLASS - 137½
140	143	Buff dolomitic ravellings, little tan chert, brown limestone, gray dolomitic limestone 50-50, few specks marcasite MaGREGOR - 141½

Total depth measured 144.0 ft. with steel tape.
Water at 68½ ft. from collar
Formations "Tops" are very unsertain, due to the excessive ravelling

Driller's remarks:
Struck water at 75 - 80
Loose & fractured 75 - 85
Caving badly 112½ - 117½
Soft, loose & caving badly 120 - 140
Hard formation 140 - 143 & strong water

Land Description: Southwest ¼ of Northwest ¼
Twnsp 2 North, Rng 1 East

Location of Hole: 300' North & 9' West of Southeast corner of Qtr/Qtr

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: ARNOLD J. SPLINTER
Began: 10-23-52 Finished: 10-25-52
Drill Owner: John F. Robinson
Drill Runner: G. Wallace

1013.22
117.6
95.6

DEPTH From	To	DESCRIPTION
0	15	Brown clay
15	20	Dark buff clay
20	25	Dark buff clay, buff dolomite 95-5
25	30	Buff clay, buff dolomite 60-40, few specks white chert
30	40	Buff dolomite, buff clay 90-10, gray & white chert 8
40	50	Buff dolomite, buff clay 95-5, gray & white chert 6
50	60	Buff dolomite, gray-brown chert 97-3, few specks limonite
60	70	Buff dolomite, gray-brown & white chert 95-5, trace limonite
70	75	Buff dolomite, gray & buff chert 96-4, limonite 1/10
75	80	Coarse cuttings: buff dolomite, brown & buff chert 60-40, limonite 2/10
80	85	Coarse cuttings: buff dolomite, brown-gray & buff chert 82-18, limonite 1/10
85	90	Buff limonite-speckled dolomite, gray-brown & tan chert 90-10, trace free limonite
90	95	Buff dolomite, gray-brown & white chert 93-7, limonite 1/10
95	100	Buff dolomite & gray-buff dolomite, green shale 2, some chert ravellings, limonite 1/10 GRAY - 95.0
100	105	Gray-buff limonite-speckled calcareous dolomite, some chert ravellings, trace limonite
105	110	Gray-buff dolomite, some chert ravellings, limonite 1/10
110	112½	Coarse cuttings: dark buff limonite-speckled dolomite, gray dark-speckled dolomite 90-10, trace limonite BLUE - 110.0
112½	115	Gray dark-speckled dolomite, buff dolomitic ravellings 65-35, calcite 1, thin trace limonite
115	117½	Dark gray dark-speckled dolomite, buff dolomitic ravellings 90-10, few specks marcasite
117½	120	Brown fossiliferous limestone, gray dark-speckled dolomite 95-5, marcasite 2/10, trace calcite OIL - 117.5
120	122½	Brown dolomitic limestone, marcasite 1/10
122½	125	Green clay, brown dolomitic limestone 80-20, trace phosphate, marcasite 1/10 CLAY - 123.0
125	127½	Dark brown dolomite, black shale 65-35, trace marcasite GLASS - 125.0
127½	130	Gray dolomitic limestone (coarse cuttings), trace brown dolomite, trace marcasite MeGREGOR - 127.5
130	133	Gray dolomitic limestone, few specks marcasite

Total depth measured 134.5' with steel tape.
Water at 73 feet.

(Continued on next page)

Property Name: ARNOLD J. SPLINTER

Driller's remarks:

0 - 20	Clay
20 - 35	Sticky clay & small boulders
35 - 45	Hard with soft spots
45 - 75	Fairly hard

Hit water at 80-85 cut.
Strong water at 150'

Land Description: Southwest ¼ of Northwest ¼, Twnsp 1 North Rng 1 East

Location of Hole: 900' West from Drill Hole #3.

Geologist: R. J. Kohlman

DRILL RECORD

The Eagle-Picher Mining & Smelting Co.

HOLE NO. 24

Property Name: [illegible]ERT ESTATE, Tract #1 — Total Depth 240

Began: 7-12-52 Finished: 7-19-52

Drill Owner: Howard Thomas

Drill Runner: Ray Reavis — Water Level 47'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buff clay
10	25	Buff clay, some buff dolomite, few specks limonite
25	35	Buff clay & buff dolomite, few specks limonite
35	45	Buff dolomite & buff clay, few specks limonite
45	60	Buff dolomite, few specks limonite
60	75	Buff dolomite
75	80	Buff dolomite & brown dolomite, gray & brown chert 97-3, a speck marcasite & limonite DRAB - 76
80	85	Buff dolomite, tan chert 98-2, a speck limonite & marcasite
85	95	Buff dolomite, brown & tan chert 97-3, a speck marcasite & limonite
95	105	Buff & brown dolomite, gray & tan chert 96-4, a speck marcasite & limonite
105	115	Brown & buff dolomite, gray & brown chert 94-6, few specks marcasite
115	125	Brown-buff dolomite, gray & brown chert 95-5, few specks marcasite
125	135	Brown-buff dolomite, brown & tan chert 94-6, few specks marcasite
135	145	Brown-buff dolomite, brown & tan chert 97-3, a speck marcasite
145	150	Light brown dolomite, brown & tan chert 97-3, a speck marcasite
150	152½	Brown dolomite, gray & tan chert 95-5, a speck marcasite
152½	155	Light brown dolomite, pale brown chert 99-1, a speck marcasite
155	165	Light brown dolomite, trace tan chert, few specks marcasite
165	175	Light brown dolomite, pale tan chert 95-5, few specks marcasite
175	180	Light brown dolomite, pale tan chert 99-1, a speck marcasite
180	182½	Light gray-brown dolomite, a speck marcasite GRAY - 180
182½	185	Light gray-brown dolomite, trace gray shale, trace marcasite
185	187½	Light brown dolomite, few specks marcasite
187½	190	Gray-brown & gray dolomite (few coarse cuttings), few specks marcasite
190	192½	Gray dolomite, trace marcasite
192½	195	Gray dolomite, thin trace marcasite
195	197½	Light brown dolomite, thin trace marcasite
197½	200	Gray dark-speckled dolomite, light brown dolomite 60-40, few specks marcasite BLUE - 198.5

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #1

From	To	
200	202½	Gray dark-speckled dolomite, trace buff dolomite, few specks marcasite
202½	205	Light gray-brown & dark-speckled dolomite, few specks marcasite
205	207½	Gray dark-speckled dolomite, few specks marcasite
207½	210	Brown & tan fossiliferous limestone, few specks marcasite OIL - 207.5
210	212½	Brown & tan fossiliferous limestone, trace dark brown shale, a speck marcasite
212½	215	Brown & tan fossiliferous limestone, dark brown shale 1, a speck marcasite
215	217½	Brown & tan fossiliferous limestone, dark brown shale 3
217½	220	Brown & tan fossiliferous limestone, trace light gray fossiliferous limestone & tan limestone
220	222½	Light brown & gray fossiliferous limestone, black fossiliferous limestone 80-20, trace green shale CLAY - 222
222½	225	Brown & tan limestone, green shale 1, few specks marcasite
225	227½	Brown & tan limestone, trace green shale, trace brown shale
227½	230	Brown & tan limestone, green shale 1, brown shale 3
230	232½	Brown & tan limestone, brown shale 7, trace green shale, a speck marcasite
232½	235	Light gray dolomite limestone, trace green shale, a speck marcasite
235	237½	Gray-brown dolomite limestone
237½	240	Light brown dolomite limestone, few specks calcite

Total depth measured 240.7' with steel tape.

Land Description: NW¼ of NE¼ of Sec. 7 T-1-N R-1-E of 4th PM

Location of Hole: 250' S & 200' E from NW corner of NW¼/NE¼ of Sec 7

Harold W. Davis
Edwin J. Roehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 24

Property Name: CALVERT ESTATE, Tract #1 — Total Depth 225
Began: 7-21-52 Finished: 7-24-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis — Water Level 42'

DEPTH From	To	DESCRIPTION
0	10	Brown & buff clay
10	25	Dark buff clay & some buff dolomite
25	40	Buff dolomite, buff clay 50-50
40	50	Buff dolomite, buff clay 70-30
50	60	Buff dolomite, trace galena, speck limonite
60	70	Buff dolomite, trace galena, speck limonite
70	75	Buff dolomite, few specks limonite
75	80	Buff & light brown dolomite, few specks tan chert, few specks marcasite
80	85	Buff & light brown dolomite, brown tan chert 97-3, few specks marcasite DRAB - 80
85	90	Gray-brown dolomite, gray & tan chert 98-2, thin trace marcasite, specks galena & blende
90	95	Gray-brown dolomite, gray & tan chert 94-6, marcasite ½, galena 3/10, few specks blende
95	100	Brown dolomite, gray & tan chert 97-3, marcasite ½, galena 2/10, specks blende
100	110	Brown dolomite, gray & tan chert 98-2, marcasite ½, trace galena, specks blende
110	120	Brown dolomite, gray & tan chert 98-2, trace marcasite, specks galena
120	130	Brown dolomite, gray & tan chert 97-3, trace marcasite, few specks galena
130	140	Gray-brown dolomite, brown shale 4, marcasite 1, few specks galena
140	150	Gray-brown dolomite, brown tan chert 99-1, brown shale 1, marcasite 1½, specks galena
150	155	Brown dolomite, trace brown shale & chert, marcasite 4
155	160	Small recovery, brown dolomite, trace tan chert, specks calcite, marcasite 2½
160	165	Brown dolomite, gray chert 95-5, marcasite 2
165	170	Brown dolomite, gray & tan chert 97-3, marcasite 2
170	175	Small recovery brown dolomite, trace tan chert, marcasite 1½
175	180	Brown dolomite, tan chert 99-1, marcasite 1½
180	182½	Brown dolomite, tan chert 99-1, marcasite 2
182½	185	Very small recovery, gray-brown & brown dolomite, marcasite ½ GRAY - 182½
185	190	No recovery
190	195	Very small recovery
195	197½	Pale-gray dark-speckled dolomite, marcasite ½ BLUE - 195
197½	200	Gray dark-speckled dolomite, considerable brown & tan dolomite (clay), trace marcasite
200	202½	Gray dark-speckled dolomite, trace calcite, marcasite 1, speck blende

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #1

From	To	
202½	205	Brown & light brown fossiliferous dolomite limestone, dark brown shale 1, trace marcasite, few specks blende OIL - 202½
205	207½	Brown & dark brown shaly limestone, marcasite ½, trace blende
207½	210	Green shale & gray clay, brown & dark brown limestone 80-20, marcasite 1, few specks blende CLAY - 208
210	212½	Brown & dark brown dolomite limestone, specks calcite, marcasite 1, few specks blende GLASS - 210
212½	215	Light gray dolomite limestone, trace dolomite limestone 95-5, marcasite ½ McGREGOR - 212½
215	217½	Light gray dolomite limestone, gray clay 5, marcasite ½
217½	220	Light gray dolomite limestone, marcasite 1
220	225	Light gray dolomite limestone, green shale 97-3, marcasite ½

Total depth measured 225.3' with steel tape.

Water at 42'

Land Description: Northwest quarter of Northeast quarter of Section 7, Twnsp 1, Rng 1 East

Location of Hole: 1000' East from Drill Hole #24

ASSAY

		ZnS	FeS_2	PbS
90	95	0.15	3.20	0.20
95	100	0.15	3.00	0.12

Analyzed by Harold Erwin

7-24-58

Harold A. Davis
Edwin A. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 26

Property Name: CALVERT ESTATE, Tract #1 — Total Depth 202.5
Began: 8-13-52 Finished: 8-18-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis — Water Level

DEPTH From	DEPTH To	DESCRIPTION
0	5	Brown soil
5	10	Brown soil
10	20	Buff dolomite & brown soil caving
20	25	Buff dolomite, few specks limonite
25	40	Buff dolomite, few specks limonite
40	55	Buff dolomite, thin trace limonite
55	60	Buff dolomite, brown chert 99-1, few specks limonite DRAB - 58
60	65	Buff dolomite, brown chert 97-3, few specks limonite
65	75	Dirty brown dolomite, dark brown chert 93-7, few specks limonite & marcasite
75	85	Light brown dolomite, brown & tan chert 97-3, specks marcasite
85	95	Light brown dolomite, brown & tan chert 96-4, specks marcasite
95	105	Light brown dolomite, brown & tan chert 96-4, few specks marcasite
105	115	Brown dolomite, brown & tan chert 96-4, specks marcasite
115	120	Light brown dolomite, gray & brown chert 96-4, few specks marcasite
120	125	Light brown dolomite, gray & brown chert 95-5, few specks marcasite
125	135	Brown dolomite, brown & gray chert 95-5, few specks marcasite
135	145	Brown dolomite, brown & gray chert 96-4, few specks marcasite (soft)
145	150	Light brown dolomite, few specks chert, a speck marcasite
150	155	Pale brown-buff & buff dolomite, a speck calcite, speck marcasite (few coarse cuttings)
155	160	Coarse cuttings coarse grained pale brown-buff & buff dolomite, a piece brown clay, a speck marcasite
160	165	Coarse cuttings coarse grained pale brown-buff & buff dolomite, a speck marcasite GRAY - 155-160
165	170	Coarse cuttings coarse grained light buff & gray-brown dolomite & gray & buff clays, few specks marcasite
170	175	Coarse cuttings coarse grained light buff & pale gray dolomite, few specks marcasite BLUE - ? (Hard)
175	180	Light buff, pale gray, gray-brown & dark gray coarse grained dolomite, trace gray clay, few specks marcasite
180	182½	Buff, gray, brown & dark gray coarse grained dolomites, some blue dolomitic limestone & brown dolomitic limestone, some fossils, gray clay 5% (coarse cuttings) few specks marcasite OIL - ?
182½	185	Same as 180-182½, but more gray clay, about 10%

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #1

From	To	
185	187½	Same as 180-182½, but more blue & brown dolomite limestone, about 15%
187½	190	Same as 180-182½
190	192½	Light gray-blue clay 20 (remainder same as 180-182½) CLAY - 187½
192½	195	Light brown & tan limestone, buff & light gray-brown coarse-grained dolomite 60-40, thin trace marcasite
195	197½	Dark brown & light brown limestone, coarse-grained dolomite 15, thin trace marcasite GLASS - 192½
197½	200	Dark brown & brown limestone, trace dark brown shale, thin trace marcasite
200	202½	Gray dolomite limestone, brown limestone 80-20, trace green shale, trace dark brown shale, thin trace marcasite McGRAGOR - 200.5

Total depth measured 204.0' with steel tape.
Water 26.25'

Note: Hole was mostly soft and caving from 180' to 191'.

Land Description: Northwest ¼ of Northeast ¼ of Sec. 7, Twnsp 1 North, Rng 1 East

Location of Hole: 570' South & 450' East from Northwest corner of Northeast ¼ of Sec. 7

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 27

Property Name: CALVERT ESTATE, Tract #1 — Total Depth 214
Started: 8-11-52 Finished: 8-21-52
Drill Super: Howard Thomas
Drill Runner: Ray Reavis — Water Level 52

DEPTH From	DEPTH To	DESCRIPTION
0	8	Buff clay & soil
8	15	Buff sandy clay
15	25	Buff dolomite
25	35	Buff dolomite
35	45	Buff dolomite
45	60	Buff dolomite
60	70	Buff dolomite
70	75	Buff & brown dolomite, tan chert [illegible]
75	80	Light brown dolomite, brown-tan chert [illegible], few specks limonite
80	90	Light brown dolomite, tan chert [illegible], few specks limonite
90	100	Light brown dolomite, brown [illegible], trace limonite
[illegible]	110	Brown dolomite, brown & tan chert [illegible], trace limonite
110	120	Brown dolomite, brown & tan chert [illegible], trace limonite
[illegible]	135	Light brown dolomite, brown & tan chert [illegible], trace limonite
135	[illegible]	No recovery, losing water
[illegible]	[illegible]	Light brown dolomite, brown & tan chert [illegible], trace limonite
[illegible]	[illegible]	Light brown dolomite, gray & tan chert [illegible], few specks limonite
[illegible]	[illegible]	Brown dolomite, trace chert, few specks limonite, few specks marcasite
[illegible]	[illegible]	Brown dolomite, brown & tan chert [illegible], few specks [illegible] limonite
[illegible]	[illegible]	Brown dolomite, brown & tan chert [illegible], few specks limonite & marcasite
[illegible]	[illegible]	[illegible] dolomite, marcasite [illegible]
[illegible]	[illegible]	No recovery, strong water — Chat - 176
[illegible]	[illegible]	[illegible] dolomite, trace gray dolomite, trace marcasite
[illegible]	[illegible]	[illegible], coarse grained dolomite, brown & buff dolomite [illegible]
[illegible]	[illegible]	[illegible] coarse grained dolomite, marcasite 1/16, [illegible]
[illegible]	[illegible]	[illegible] coarse grained dolomite, trace marcasite Chat - 180½
[illegible]	[illegible]	[illegible] grained dolomite, pale gray, coarse grained [illegible], trace marcasite, [illegible]
[illegible]	[illegible]	[illegible] coarse grained dolomite, trace marcasite
[illegible]	[illegible]	[illegible] grained dolomite, brown clay [illegible], brown dolomite [illegible], trace marcasite
[illegible]	[illegible]	[illegible] fossil specks [illegible] dolomitic limestone, [illegible] Oil - 197½

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #1

From	To	
200	202½	Light brown & tan fossiliferous dolomitic limestone, green shale & gray clay 80-20, specks phosphate, trace marcasite, specks galena
202½	205	Light brown dolomitic limestone, gray clay 80-20, brown shale 5, marcasite 1/10, few specks galena CLAY - 202
205	210	No recovery, caving, strong water GLASS - 203
210	212	Brown dolomitic limestone, trace marcasite
212	214	Gray dolomitic limestone, brown dolomitic limestone 60-40, trace marcasite, specks galena McGREGOR - 213

Total depth measured 215.0' with steel tape.
Water at 52'

Land Description: Southeast ¼ of Northeast ¼ of Sec. 7, Twnsp 1 North, Rng 1 East

Location of Hole: 100' North Drill Hole #16

Geologists: Norman Eastmoore
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 28

Property Name: CALVERT ESTATE, Tract #1 — Total Depth 215
Began: [illegible]-[illegible]-52 Finished: [illegible]-[illegible]-52
Drill Owner: Thomas
Drill Runner: Ray Reavis — Water Level 82

DEPTH From	To	DESCRIPTION
0	4	Soil
4	10	Yellow clay
10	25	Yellow clay, with some buff dolomite
25	30	Buff dolomite, trace limonite
30	40	Buff dolomite, limonite ½
40	50	Buff dolomite, trace limonite, a speck calcite
50	60	Buff dolomite, trace limonite, a speck calcite
60	70	Buff & brown dolomite, trace limonite
70	80	Buff & gray & light brown dolomite, tan chert [illegible], trace limonite
		DRAY - 7
80	90	Buff & brown dolomite, tan & gray chert [illegible], limonite 1, [illegible]
90	100	Brown & buff dolomite, tan & gray chert [illegible], limonite & marcasite [illegible], [illegible]
100	110	Buff & buff-gray dolomite, tan & gray chert [illegible], trace limonite, [illegible]
110	120	Buff-gray dolomite, tan & gray chert [illegible], trace limonite & marcasite
120	130	Buff-gray dolomite, trace tan chert, trace limonite & marcasite, a speck [illegible]
130	140	Buff-gray & light brown dolomite, tan & gray chert [illegible], trace marcasite, a speck [illegible]
140	150	Buff-gray & light brown dolomite, gray chert [illegible], marcasite [illegible]
150	160	Brown & buff dolomite, brown & tan chert [illegible], marcasite 1
160	170	Brown & buff dolomite, brown & tan chert [illegible], marcasite ½
170	175	Brown & buff dolomite, trace tan chert, marcasite ½
175	177½	Gray & light brown dolomite, marcasite [illegible], trace green clay
		CAPY - 178
177½	180	Gray & light brown dolomite, marcasite ½
180	182½	Gray & light brown dolomite, trace gray clay, marcasite ½
182½	185	Gray dolomite, marcasite 1, trace calcite
185	187½	Gray dolomite, marcasite 1½
187½	190	Brown & some dark-speckled gray dolomite, gray dark-speckled gray dolomite, gray dark-speckled clay [illegible], a speck [illegible], marcasite ½
190	192½	Gray dark-speckled dolomite, calcite [illegible], marcasite [illegible], trace [illegible]
		[illegible] - 189
192½	195	Gray dark-speckled dolomite, gray clay [illegible], calcite [illegible], marcasite 1, a speck [illegible]
195	197½	Brown & gray dolomite limestone, trace gray dark-speckled dolomite, brown shaly limestone [illegible], marcasite 1, lead ½
		OIL - 195

(Continued on next page)

Geologists [illegible]

[illegible]

Page [illegible]

Property name: [illegible]

From [illegible]

197½	200	From [illegible]
200	202½	[illegible]
202½	205	[illegible] ray [illegible]
205	207½	[illegible]
207½	210	[illegible]
210	212½	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

Water at [illegible]
Hit water at: [illegible] wood
[illegible] too strong
[illegible] too strong

Hole was [illegible]

Land Description: [illegible] of [illegible]

Geologist: Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 29

Property Name: CALVERT ESTATE (Tract #1) Total Depth 214
Began: 9-3-52 Finished: 9-13-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis Water Level 64

DEPTH From	To	DESCRIPTION
0	8	Brown clay & soil
8	15	Buff clay & some buff dolomite
15	50	Buff dolomite, few specks limonite & marcasite
50	70	Dark buff dolomite, few specks limonite & marcasite
70	75	Brown-buff & light brown dolomite, brown & tan chert 96-4, DRAB - 75
75	85	Brown-buff dolomite, brown & tan chert 94-6, few specks limonite & marcasite
85	95	Brown-buff dolomite, brown & tan chert 96-4, few specks marcasite & limonite
95	105	Buff & light brown dolomite, brown & tan chert 97-3, trace limonite & marcasite
105	115	Buff & light brown dolomite, brown & tan chert 98-2, trace limonite & marcasite
115	125	Pale brown & light buff dolomite, tan chert 98-2, trace marcasite & limonite
125	135	Brown & buff dolomite, brown & tan chert 95-5, trace marcasite
135	145	Brown & buff dolomite, brown & tan chert 96-4, marcasite 1/10
145	155	Buff & light brown dolomite, coarse cuttings brown & tan chert 95-5, marcasite ½, trace limonite
155	165	Light brown & buff dolomite, coarse cuttings brown & tan chert 96-4, limonite & marcasite 1
165	170	Coarse cuttings brown & buff dolomite & brown & tan chert, marcasite & limonite 4, few specks blende
170	175	Gray, buff & brown dolomite & brown & tan chert, calcite ½, marcasite 4, blende ½
175	177½	Gray, brown & buff dolomite, some brown & tan chert, calcite ½, marcasite 3½, blende 1
177½	180	Gray & brown dolomite, brown & tan chert 15, calcite 1, marcasite 4, blende ½
180	182½	Gray & brown dolomite, brown & tan chert 17, calcite ½, trace gray clay, marcasite 5, blende ½
182½	185	Gray dolomite, some light brown-buff limy dolomite, brown & tan chert 20, marcasite 9, blende 3/10
185	187½	Gray, brown & buff dolomite, gray clay 5, brown chert 10, marcasite 8, blende 1
187½	190	Gray-brown & buff dolomite, gray clay 6, brown chert 12, marcasite 5, blende ½ OIL - 190-192½
190	192½	Gray-brown & buff dolomite, some brown chert, some brown dolomitic limestone & few fossils, marcasite 5, blende 1½
192½	195	Gray, brown & buff dolomite & brown chert, some brown dolomitic limestone & fossils, marcasite 7, blende 1
195	197½	Brown chert 70%, some brown dolomitic limestone & gray & buff dolomite, marcasite 10, blende 1½

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Geologist: Edwin J. Poehlmann

HOLE NO. 29
Continued

Page 2

Property Name: [illegible] ESTATE [illegible]

From	To	
197½	200	Brown chert [illegible], some brown dolomitic limestone, gray clay [illegible], [illegible]
200	202½	Brown dolomitic limestone [illegible] tons of gray [illegible] dolomite & brown chert, gray clay [illegible], marcasite [illegible], [illegible] [illegible] - [illegible] 202
202½	205	Dark brown dolomitic limestone, [illegible] gray [illegible], considerable dolomite [illegible] part rave[illegible], marcasite [illegible], [illegible] [illegible] - 202½
205	207½	GRAY [illegible] dolomitic rave[illegible] [illegible], trace calcite, marcasite [illegible], [illegible] 7
207½	208	GRAY [illegible] dolomitic rave[illegible] [illegible], marcasite [illegible], [illegible] 3 Few specks appear to be [illegible], dolomitic limestone in [illegible]
208	210	Gray dolomitic limestone [illegible] dolomitic limestone [illegible] gray rave[illegible] [illegible], marcasite [illegible] [illegible] 3 [illegible] - [illegible]
210	214	Gray dolomitic limestone, [illegible] ravellings [illegible], marcasite 14, [illegible]

Total depth measured 214 with steel tape.
Water at 64

Land Description: Northwest [illegible] of Northeast ¼ of Se[illegible] 7, Twp. 2 South, Rng. 1 East

Location of Hole: 40[illegible] South from Drill Hole #5

[illegible]	[illegible]	[illegible]	[illegible]
17[illegible]-17[illegible]	[illegible]	[illegible]	[illegible]
17[illegible]-1[illegible]	[illegible]	[illegible]	[illegible]
17[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
18[illegible]-1[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
1[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
19[illegible]-[illegible]5	[illegible]	[illegible]	[illegible]
19[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
19[illegible]-[illegible]0	[illegible]	[illegible]	[illegible]
20[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
20[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
20[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
20[illegible]-[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 30

Property Name: CALVERT ESTATE, Tract #1
Began: 9-17-52 Finished: 9-2[illegible]-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis

Elevation 957.17

DEPTH From	To	DESCRIPTION
0	10	Black soil
10	15	Brown clay
15	20	Brown clay, buff dolomite 95-5
20	25	Brown clay, buff dolomite 9[illegible]-10
25	30	Buff dolomite, few specks limonite
30	35	Buff dolomite, trace limonite (considerable brown clay)
35	40	Buff dolomite, thin trace limonite (considerable brown clay)
40	45	Buff dolomite, brown clay, trace dark gray clay, trace limonite
45	50	Buff dolomite, brown clay, few specks marcasite
50	55	Buff dolomite, brown clay 7[illegible]-15, brown chert 1, few specks marcasite, a speck blende DRAY - 5[illegible]
55	60	Dark buff dolomite, tan & brown chert 85-1[illegible], specks marcasite
60	70	Buff & dark buff dolomite, brown & tan chert [illegible]-1[illegible], specks marcasite & limonite
70	75	Buff dolomite, brown chert, brown dolomite [illegible]-15-[illegible], few specks galena (coarse cuttings)
75	80	Buff dolomite, tan chert 9[illegible]-[illegible], trace dark gray clay
80	90	Buff dolomite, tan & brown chert 85-15
90	100	Buff dolomite, tan & brown dolomite 75-[illegible], [illegible] galena
100	105	Buff dolomite, gray-brown & tan chert [illegible], few specks galena
105	110	Coarse cuttings: buff dolomite, gray-brown & tan chert 92-8
110	115	Buff dolomite, tan chert 90-1[illegible], trace [illegible] dolomite
115	1[illegible]	Buff dolomite, tan & gray-brown chert [illegible], buff clay [illegible], trace gray shale
120	125	Dark buff dolomite, tan chert [illegible]-[illegible], buff clay [illegible], trace gray shale
125	130	Dark buff dolomite, tan & brown chert 90-1[illegible], fairly coarse cuttings
130	135	Dark buff dolomite, tan & brown chert 94-[illegible], brown clay 5
135	140	Dark buff dolomite, tan chert 9[illegible]-5, brown-buff clay [illegible], gray shale 1, few specks marcasite
140	145	Buff dolomite, brown, tan & gray chert 93-7, gray shale [illegible], trace marcasite
145	150	Brown dolomite, gray-brown chert, buff dolomite 6[illegible]-[illegible]-10 (coarse cuttings), marcasite 1, few specks blende
150	155	Coarse cuttings: brown dolomite, gray-brown chert, buff dolomite [illegible]-[illegible]-1[illegible], marcasite 1½, few specks blende
155	160	Coarse cuttings: brown dolomite, gray-brown chert, buff dolomite 7[illegible]-[illegible]-1[illegible], few coarse chips of gray dolomite, marcasite 1½, blende 1/10 GRAY - 155
160	162½	Brown dolomite, gray-brown chert, buff dolomite 60-[illegible]-[illegible], marcasite 2, blende [illegible]/10

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #1

From	To	
162½	165	Coarse cuttings: brown dolomite, dark buff dolomite, gray-brown chert 80-13-7, marcasite 3, trace blende
165	167½	Coarse cuttings: brown dolomite, gray-brown & tan chert 92-8, marcasite 3, trace blende
167½	170	Coarse cuttings: brown dolomite, tan & gray-brown chert, buff dolomite 70-15-15, marcasite 5, few specks blende
170	172½	Brown dolomite, gray-brown & tan chert, buff dolomite, gray marcasite-speckled dolomite, gray clay 85-5-5-3-2, marcasite 8 (mostly coarse), few specks blende BLUE - 170?
172½	175	Brown dolomite, gray-brown & tan chert, buff dolomite 85-10-5, trace gray dolomite & gray clay, coarse cuttings; marcasite 10, few specks blende
175	177½	Brown dolomite, gray-brown chert 92-8, trace buff dolomite, marcasite 15, few specks blende
177½	180	Brown dolomite, gray-brown chert 85-15, trace gray dolomite, marcasite 12, few specks blende & calcite
180	182½	Buff dolomite, brown dolomite, gray-brown chert 50-45-5, trace tan fossiliferous limestone (coarse cuttings), marcasite 8, few specks blende OIL - 180?
182½	185	Brown dolomite, buff dolomite, gray-brown chert 60-30-10, trace gray clay & light gray clay, marcasite 3, trace blende
185	187½	Brown & buff dolomite, gray clay, few specks phosphate, gray-brown chert 4, marcasite 2, few coarse crystals of blende CLAY - 186?
187½	190	Extra coarse cuttings: brown & buff dolomite, trace chert, dark brown "Glassrock" dolomite, marcasite 1%, few specks blende, few specks calcite GLASS - 188?
191	192½	Dark buff dolomite, brown limestone 80-20, marcasite 2, few coarse pieces of blende
192½	195	Dark buff dolomite, dark gray coarse-grained dolomite 90-10, trace brown limestone, few fossils, marcasite (coarse) 5, few specks blende
195	197½	Dark buff dolomite, gray dolomitic limestone 90-10, marcasite (coarse) 7, few specks blende McGREGOR - 195

Total depth measured 197.5' with steel tape.
Water at 32' from collar.
Hole was extremely loose and caving badly.
Impossible to pick contacts accurately.
Hole was not cased due to uncertainty of where to set it.

Land Description:
Location of Hole: North 50° West 150' from Drill Hole #29

Geologist: H. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: CALVERT ESTATE (Tract #1) Hole No. 31
Began: 10-2-52, finished 10-7-52 Total Depth 218'
Drill Owner: Howard Thomas
Drill Runner: Howard Thomas Elev. _____

200
774

From	To	
0	5	Soil
5	10	Dark buff dolomite-red/brown clay 95-5, trace limonite, speck galena
10	15	Dark buff dolomite-trace limonite, few specks marcasite & galena
15	25	Dark buff dolomite-limonite 2/10, few specks marcasite & galena (coarse)
25	35	Buff dolomite-trace limonite, few specks marcasite (rather coarse cuttings)
35	50	Buff dolomite-few specks limonite & marcasite
50	60	Buff dolomite-few specks limonite & marcasite
60	65	Buff dolomite-thin trace limonite
65	70	Dark buff dolomite-trace calcite, trace limonite, speck galena
70	75	Dark buff dolomite-brown chert 98-2, trace limonite DRAB 73
75	80	Rather coarse cuttings: Buff dolomite-brown chert 80-20, trace galena
80	85	Buff dolomite-brown & dark buff chert 85-15, trace galena
85	90	Buff dolomite-dark buff chert 75-25, galena 1%
90	95	Buff dolomite-buff & tan chert 92-8, galena 2/10
95	100	Buff dolomite-buff, tan & brown chert 80-20, trace galena
100	110	Buff & gray-brown dolomite-buff, tan & gray chert 88-12, galena 3/10
110	120	Dark buff dolomite-buff & gray chert 90-10, trace galena, few specks marcasite
120	130	Buff dolomite-buff chert 98-2, trace limonite stained clay & gray clay, thin trace galena
130	140	Buff dolomite-brown dolomite-tan chert 95-3-2, galena 1/10
140	150	Buff dolomite-trace tan chert, trace galena, trace limonite
150	160	Buff dolomite-brown dolomite-tan chert 80-15-5, trace calcite, marcasite & limonite ½
160	170	Buff & brown dolomite-tan & gray chert 95-5, marcasite 1
170	175	No recovery TRAY 175
175	177½	Gray/brown dolomite-buff dolomite 90-10, calcite 5, marcasite 4
177½	180	Gray dolomite-buff & brown dolomite ravellings 30, calcite 4, marcasite 8, speck galena
180	182½	Brown/gray dolomite-trace dark gray clay, calcite 1, marcasite 18 (set casing to 182½')
182½	185	Gray/brown dolomite-dark gray clay 1, trace calcite, marcasite 16
185	187½	Gray/brown dolomite-trace calcite, marcasite 20
187½	190	Gray/brown dolomite-(some buff dolomite ravellings) marcasite 22 BUFF 190
190	192½	Dark gray/brown dolomite-trace fossils, marcasite 10
192½	195	Dark gray/brown dolomite-trace fossils, marcasite 15, few specks blende
195	197½	Coarse cuttings: Dark gray/brown dolomite-trace fossils, marcasite 7, blende 3% (coarse crystals)
197½	200	Coarse cuttings: Dark gray/brown dolomite-gray dark/speckled dolomite 60-40, gray clay 1, marcasite 12, blende 5% OIL 200
200	202½	Gray/brown dolomite-trace fossils, marcasite 17, blende 7%

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #1)

Hole No. 31
(Continued)

From	To	
202½	205	Gray/brown dolomite-brown fossiliferous dolomitic limestone
205	207½	Brown fossiliferous dolomitic limestone-green clay 80-20, marcasite 8, blende 2% CLAY 207 (?)
207½	210	Gray/brown fossiliferous dolomitic limestone-gray clay 60-40, marcasite 10, blende 1% GLASS 208½ (?)
210	212½	Gray/brown dolomitic limestone-gray dolomitic limestone 80-20, marcasite 10, blende 7/10 MacGREGOR 212 (?)
212½	215	Gray - brown/gray dolomitic limestone-marcasite 5, blende ½
215	217½	Brown/gray dolomitic limestone-marcasite 9, blende 1%
217½	218½	Gray dolomitic limestone-marcasite 25, blende 10%, (this last cut was very firm formation and mineralization is ravelling from above.)

TDW 218 w s t
Water at 56½' from collar
Difficult to pick contacts.

Driller's Remarks: 125 to 130 very loose, Cilrock was very soft
210 to 218½ very hard formation
Set 4 & 7/8 casing at 182½ and it followed bit to 195 feet.

Approx. elev. of collar is 974.0 ft.

Description of land: SW/NE
Location of hole: 75' S from DH #29

ASSAY

		ZnS	FeS_2	PbS
85	90	0.30	4.30	1.17
180	182½	0.25	12.10	nil.
182½	185	0.35	15.10	"
185	187½	0.85	14.90	"
187½	190	0.60	12.90	"
190	192½	0.80	13.40	"
192½	195	1.10	12.90	"
195	197½	7.10	17.00	"
197½	200	10.60	21.70	"
200	202½	5.30	19.60	"
202½	205	2.20	11.20	"
205	207½	1.65	9.30	"
207½	210	1.30	18.90	"

Geologist: Harold F. Davis

Drill Record
The Eagle-Picher Company

HOLE NO. 32

Property Name: CALWERT ESTATE (Tract #1)
Began: 10-9-52 Finished: 10-15-52
Drill Owner: H. Thomas
Drill Runner: C. Loomis Elev. 975.25±

DEPTH From	To	DESCRIPTION
0	10	Brown clay
10	15	Buff dolomite, brown clay 75-25, trace limonite
15	20	Dark buff dolomite, limonite 3/10, marcasite 1/10, trace galena, specks blende
20	25	Buff dolomite, trace limonite, few specks marcasite & galena
25	35	Buff dolomite, limonite 4/10, few specks marcasite & galena
35	50	Buff dolomite (some limonite-speckled) trace limonite
50	60	Buff dolomite (some limonite-speckled) limonite 3/10
60	70	Dark buff dolomite, limonite ½
70	75	Buff dolomite, limonite 2/10
75	80	Buff dolomite, dark brown chert 92-8, limonite 1/10 DRAB - 77½
80	90	Brown-buff & dark buff dolomite, marcasite-speckled chert & tan chert 94-6, limonite & marcasite ½, trace galena
90	100	Brown-buff dolomite, marcasite-speckled chert 95-5, marcasite & limonite 5
100	110	Brown-buff dolomite, brown, gray & tan chert 91-9, limonite & marcasite 1, trace galena
110	115	Brown dolomite, gray-brown chert 88-12, marcasite & limonite 3/10, thin trace galena
115	120	Brown-buff dolomite, gray chert 85-15, marcasite & limonite 1/10
120	130	Brown-buff dolomite, gray & tan chert 90-10, marcasite & limonite 1/10, specks galena
130	140	Buffish-brown dolomite, tan chert 99-1, marcasite & limonite ½, specks galena
140	150	Brown dolomite, tan & gray chert 94-6, trace calcite, limonite & marcasite 2/10
150	160	Brown dolomite, trace tan chert, trace calcite, trace marcasite
160	170	Brown dolomite, tan & gray chert 93-7, marcasite 1
170	175	Brown dolomite, trace tan chert, trace calcite, marcasite 12
175	177½	Brown dolomite, trace calcite, marcasite 15
177½	180	Brown dolomite, marcasite 20
180	182½	Brown dolomite, trace gray dolomite, trace calcite, marcasite 18
182½	185	Gray dolomite, marcasite 12 GRAY - 182½
185	187½	Gray dolomite, marcasite 10
187½	190	Gray dolomite, marcasite 8, trace calcite
190	192½	Gray dolomite, marcasite 9, trace calcite
192½	195	Gray dolomite, marcasite 8
195	197½	Brown-gray dolomite, gray dark-speckled dolomite 60-40, calcite 20, marcasite 20, blende 5, gray clay 1 BLUE - 196

(Continued on next page)

Property Name: CALVART ESTATE (Tract #1)

From	To	
197½	200	Gray dark-speckled dolomite, gray clay 5, calcite 5, marcasite 7, blende 1
200	202½	Brown dolomite, gray dark-speckled dolomite 60-40, some fossils, calcite 4, marcasite 5, blende 7 OIL - 201
202½	205	Brown fossiliferous dolomitic limestone, marcasite 8, blende 5
205	207½	Brown fossiliferous dolomitic limestone, brown shale 97-3, trace brown clay, marcasite 7, blende 4
207½	210	Brown dolomitic limestone, green clay 80-20, marcasite 3, blende 1 CLAY - 209½
210	212½	Brown dolomitic limestone, green clay & gray fossiliferous limestone, marcasite 2, blende 6/10
212½	215	Coarse cuttings: Dark brown dolomite, bentonite 90-20, marcasite 2, blende 3/10 GLASS - 213
215	217½	Dark brown dolomite, gray dolomitic limestone 60-40, marcasite 2, blende ½ MAGNESITE - 216½
217½	220	Gray dolomitic limestone, marcasite 3, blende 3/10

Total depth measured 217.5 with steel tape.
Water 51'

Location of Hole: 50' South from Drill Hole #31

Assays

	ZnS	FeS_2	PbS
175 -177½	nil.	15.60	nil.
177½-180	"	10.80	"
180 -182½	"	3.40	"
182½-185	"	10.50	"
195 -197½	6.65	19.80	"
197½-200	2.40	14.00	"
200 -202½	3.60	8.60	"
202½-205	5.15	7.50	"
205- 207½	3.25	2.40	"
207½-210	3.15	9.50	"

Wisconsin

Geologist: H. H. Mavis

DRILL RECORD

The Eagle Picher Company

Property Name: CALVERT ESTATE (Tract #1)
Began: 10-17-52, finished 11-1-52
Drill Owner: H. Thomas
Drill Runner: H. Mavis

Hole No. 33
Total Depth 203'
Elev. ~~[illegible]~~ 185 / 776½

From	To	
0	5	Dark buff dolomite-speck limonite & marcasite
5	10	Dark buff dolomite-trace limonite
10	20	Buff dolomite-trace limonite, few specks calcite
20	30	Buff dolomite-few coarse pieces of limonite
30	40	Buff limonite/speckled dolomite
40	50	Buff & dark buff dolomite-trace gray/brown clay
50	60	Buff & dark buff dolomite-gray/brown clay 1, trace calcite
60	65	Buff & dark buff dolomite-gray/brown clay 2, trace calcite
65	70	Buff dolomite-brown & tan chert 95-5 GRAB 67½
70	75	Buff dolomite-brown & dark buff chert 92-8
75	80	Buff dolomite-brown, buff & tan chert 70-30, dark gray/brown clay 3
80	90	Buff & dark buff dolomite-brown, buff & tan chert 75-25, dark gray/brown clay 5
90	100	Some coarse cuttings: Buff & dark buff dolomite-brown, buff & tan chert 82-15, dark gray/brown clay 1
100	110	Buff & dark buff dolomite-brown, buff & tan chert 80-20, dark gray/brown clay 4, few specks galena
110	120	Fine Cuttings: Buff dolomite-light gray chert 90-10, few specks galena, trace dark gray clay
120	130	Fine Cuttings: Buff dolomite-light gray chert & buff chert 95-5, trace dark gray clay
130	140	Buff & dark buff dolomite-white & buff chert 96-4
140	145	Dark buff & buff dolomite-white & buff chert 92-8, thin trace galena & marcasite
145	150	Buff & dark buff dolomite-tan & gray/brown chert 96-4, few specks galena
150	155	Buff & dark buff dolomite-tan chert 99-1, trace blue clay, few specks galena
155	160	No Recovery
160	165	Buff dolomite-tan chert 93-7, few specks dark brown chert
165	170	Buff dolomite-brown dolomite-gray/brown & tan chert 50-30-20, few specks marcasite & galena GRAY 170
170	175	Buff coarse-green dolomite, dull green clay 2, trace limonite, few specks galena
175	180	Dark buff dolomite-dark gray coarse-green dolomite 50-50, trace marcasite BLUE 178
180	182½	Dark gray coarse-grained dolomite-dark buff dolomite & chert ravellings 80-20, trace dark brown dolomite-trace marcasite
182½	185	Dark gray dolomite-numerous fossils, dark buff dolomite & chert ravellings 25, trace dark brown dolomite-thin trace marcasite OIL 185
185	187½	Buff dolomite-tan chert 95-15 (apparently nothing but ravelling)
187½	190	Buff dolomite & chert ravelling-light gray clay 96-4, marcasite 1/10, few specks galena

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #1)

Hole No. 33
(Continued)

From	To	
190	192½	Buff dolomite & chert ravelling-trace light gray dark/speckled limestone-trace green shale, trace marcasite, few specks phosphate CLAY 192
192½	195	Buff dolomite & chert ravelling-green shale & dark gray fossiliferous limestone-brown limestone 95-3-2, trace limonite & marcasite GLASS 194
195	197½	Buff dolomite & chert ravellings-brown limestone 95-5, few specks marcasite
197½	200	Buff dolomite ravellings-brown limestone 70-30, trace dark brown shale, trace green shale, trace marcasite McGREGOR 200
200	202½	Buff dolomite ravelling-brown limestone-gray dolomitic limestone 50-30-20, green shale 8, dark brown shale 1, trace marcasite

TDH 203.0' w 3 t
water at 37' from collar
Assays: No.

Extremely loose hole, cased to 150' and should have been cased more. Impossible to pick Tops of formations accurately.

Driller remarks:

175-185 Soft formation
185-192 Oilrock was hard
192½-197 Glassrock hard.

C. Loomis drilled the hole t 160' & Reavis finished it.

Description of Land: NW/NE 15 1E

Location of Hole: N 38 degrees E 230' from DH #29.

Wisconsin Geologist: R. F. Davis

DRILL RECORD
WEST EAGLE TIGHTEN COMPANY

Property Name: CALVERT ESTATE (Tract #1) Hole No. 34 (DMFA)
Began: 11-3-52, finished 11-11-52 Total Depth 220
Drill Owner: Thomas R. Davis
Drill Runner: R. Davis Elev. 865.85
1920.5
993

From	To	
0	15	Black soil
15	20	Buff dolomite-brown clay 80-20, limonite 4
20	25	Dark buff dolomite
25	30	Buff dolomite
30	40	Dark buff dolomite
40	50	Coarse cuttings: Buff dolomite-trace gray & brown clay
50	55	Buff dolomite-trace calcite, brown clay 1, trace limonite
55	60	Buff dolomite-brown clay 2, trace limonite
60	65	Buff dolomite-brown clay 2, trace brown & gray/brown chert, limonite 1/10 GRAY 65
65	70	Buff dolomite-gray/brown & buff chert 8, dark gray/brown clay 4, thin trace limonite
70	75	Buff dolomite-gray/brown & buff chert 85-15, dark gray/brown clay 1, marcasite & limonite 2/10, thin trace galena
75	80	Buff dolomite-gray/brown, brown & buff chert 80-20, dark gray/brown clay 1, marcasite 1/10
80	85	Buff dolomite-gray/brown & buff chert 90-10, gray/brown clay 1, trace marcasite
85	90	Buff dolomite-gray/brown, brown, & buff chert 88-12, trace gray/brown clay, trace limonite & marcasite
90	95	Brown/gray marcasite/speckled dolomite-buff dolomite 97-3, brown & gray/brown clay 1, marcasite 3/10, trace galena
95	100	Buff dolomite-light gray chert 90-10, marcasite 1/10, galena 1/10
100	110	Buff dolomite-gray & gray/brown chert 93-7, trace marcasite, few specks galena
110	120	Buff dolomite-gray & buff chert 96-4, trace gray/brown clay, marcasite 1/10, few specks galena
120	130	Buff dolomite-gray & tan chert 94-6, brown & gray/brown clay 2, trace marcasite
130	135	Buff dolomite-gray, tan & buff chert 95-5, gray/brown clay 5, trace marcasite
135	140	Brown dolomite-buff dolomite 90-10, trace gray chert, gray/brown clay 1, thin trace marcasite
140	145	Buff & brown/buff dolomite-trace gray chert, trace calcite, trace gray/brown clay, marcasite 1/10, speck galena
145	150	Buff dolomite-brown & grey marcasite/speckled chert 92-8, brown clay 3, marcasite 3/10
150	155	Buff & brown/buff dolomite-brown, gray & buff & tan chert 95-5, marcasite 2/10, speck galena
155	160	Buff & dark buff dolomite-brown & tan chert 99-1, brown clay 1, thin trace marcasite
160	165	Buff & dark buff dolomite-brown & tan chert 98-2, few specks marcasite
165	170	Buff dolomite-trace tan & buff chert, few coarse chips gray dolomite-trace gray/brown clay, trace marcasite
170	175	Light buff & dark buff dolomite-few specks gray dolomite-trace brown & gray/brown clay, limonite & marcasite 1/10 GRAY 170
175	180	Dark buff dolomite-brown & gray/brown chert ravellings 1, trace limonite & marcasite
180	1[illegible]	Coarse cuttings: Dark buff dolomite-limonite & marcasite 1

(Continued on next page)

Property Name: CALVERT DISTRICT (Tract #1) Hole No. 34 (DMEA)
(continued)

From	To	
182½	185	Coarse cuttings: Buff & dark buff dolomite-chert ravellings 1, marcasite 25, trace limonite
185	187½	Buff dolomitic ravellings, dark gray dolomite 98-2, chert ravellings 1, marcasite 5, limonite ½ BLUE 185
187½	190	Dark buff dolomite & chert ravellings-dark gray dolomite 80-20, marcasite 4 OIL 192½
190	192½	Dark buff dolomitic ravellings-dark gray dolomite 60-40, trace brown fossiliferous dolomitic limestone-marcasite 4, few specks blende
192½	195	Buff dolomitic ravellings, brown dolomitic limestone 90-10, marcasite 35, speck blende, some dark gray dolomitic ravellings
195	197½	Buff dolomitic ravelling-brown fossiliferous dolomitic limestone-green clay-dark gray dolomitic ravelling, marcasite 30, few specks blende, speck phosphate CLAY 196½
197½	200	Buff dolomite & dark gray dolomitic ravelling, green clay 40, marcasite 20 CLAY 200
200	202½	Ravelling from overlying beds-dark brown dolo- ~~to 98-2,~~ marcasite 16
202½	205	Ravelling from overlying beds-brown limestone & dolomite 96-4, trace calcite, marcasite 7
205	207½	Ravelling from overlying beds-(gray dolomitic limestone-brown dolomite 80-20)-marcasite 5 MARBLE 205½
207½	210	Ravelling from overlying beds-gray dolomitic limestone-marcasite 4
210	215	Ravelling from overlying beds-gray dolomitic limestone-marcasite 8, speck blende
215	220	Mostly gray dolomitic limestone-some ravelling from overlying beds, marcasite 25 caving

T.D.V. 220.8' w.s.t. -- water at 40'

Driller's remarks: Soft & caving 180 to 182½; soft 182- to 200; hard 200 to 220.

All formation 'Tops' are questionable due to loose caving condition of hole. H. S. D.

Land Description: SW/NE- 1 N, 1 E.
Location of Hole: 200' N. from DH #32

ASSAY

		Zns	Pb	Zns
182½	185	nil.	36.30	nil.
185	187½	0.85	40.00	"
187½	200	0.95	32.00	"
200	202½	0.55	23.60	"

Analyzed by Harold Erwin

11-25-52

Wisconsin, Geologist: [illegible]

[illegible] Hole No. 35 ([illegible])

The Eagle-Picher Company

Property Name: [illegible] (Tract [illegible]) Total depth 215'
Began: 11-12-52 Finished: 11-21-52 Track water 90'
Drill Owner: Thomas [illegible] Heavis
Drill Runner: [illegible] Heavis Elevation 187.5 / 777

From	To	
0	17	Brown and ochre clay
17	25	Buff dolomite-little buff clay
25	35	Buff dolomite
35	40	Dark buff dolomite-limonite 1/10
40	45	Dark buff dolomite-limonite 2
45	50	Dark buff dolomite-limonite 1
50	55	Buff dolomite-limonite 1½, few specks marcasite
55	60	Buff dolomite-limonite 1
60	65	Buff dolomite-gray brown chert 92-8, limonite 3 [illegible] - 62½
65	70	Buff dolomite-gray/brown chert 97-3, limonite stained clay 5, gray clay 1, [illegible] 1/2%
70	75	Buff, brown and gray brown chert-buff dolomite 70-30, limonite 1, [illegible] 1/10%, few specks marcasite
75	80	Brown/buff dolomite-buff, gray and brown chert [illegible]-10, limonite 2/10, marcasite 1/10, [illegible]
80	85	Brown/buff dolomite-buff, gray, brown and tan chert [illegible]-10, limonite 4/10, trace marcasite, [illegible]
85	90	Buff/brown dolomite-buff, gray, brown and marcasite/speckled chert 90-10, limonite and marcasite 3/10, [illegible]
90	95	Brown/buff dolomite-buff, gray/brown and gray chert 92-8, limonite and marcasite 2/10, [illegible]
95	100	Brown/buff dolomite-gray brown chert 97-3, trace light brown clay and limonite stained clay, limonite and marcasite 1/10, [illegible]
100	110	Brown dolomite-gray and light brown chert 95-5, trace marcasite [illegible]
110	120	Light brown dolomite-gray and gray buff chert 93-7, trace dark gray clay, few specks marcasite and [illegible]
120	130	Brown/buff dolomite-gray, buff, brown and tan chert 94-6, gray clay 3, few specks marcasite and [illegible]
130	140	Brown/buff dolomite-gray and tan chert 98-2, gray clay 2, a speck marcasite and [illegible]
140	150	Brown/buff dolomite-gray and tan chert and brown chert 94-6, gray clay 1/2, a speck marcasite and [illegible]
150	155	Brown/buff dolomite-gray, brown and buff chert 92-8, few specks marcasite
155	160	Buff dolomite-buff and gray brown chert [illegible]-15, gray clay 1, few specks marcasite
160	165	Buff dolomite-tan and buff chert 93-7, brown clay 4, few specks marcasite [illegible] - 165
165	170	Buff and dark buff dolomite-chert ravellings 5, gray clay 1, a speck marcasite
170	172½	Gray/buff dolomite-dark brown limonite stained dolomite 80-20, few specks green shale, few specks marcasite marcasite
172½	175	Dark buff limonite stained dolomite-tan chert ravellings 6, a speck marcasite
175	177½	Buff dolomite and dark buff limonite stained dolomite-tan chert ravellings 20, speck marcasite

(Continued on next page)

Property Name: [illegible] (Tract #1) Hole No. 35 ([illegible]A)
(Cont'nued)

From	To	
177½	180	Buff dolomite and dark buff limonite stained dolomite-gray dark/speckled dolomite 70-30 OIL - 179½ tan and buff chert ravellings 6, trace marcasite
180	182½	Gray dark/speckled dolomite-buff dolomite ravellings-gray clay 60-30-10, marcasite 1/2
182½	185	Gray dark/speckled dolomite-gray clay 3, marcasite 4/10
185	187½	Gray dark/speckled dolomite-trace fossils, marcasite 3
187½	190	Tan fossiliferous limestone-blue and buff dolomite ravellings 20-80, calcite 1, marcasite 6 OIL - 187½
190	192½	Blue ravellings-buff ravellings 95-5, trace brown dolomitic limestone, trace fossils, marcasite 1
192½	195	Blue ravellings-brown fossiliferous dolomitic limestone 80-20, brown shaly limestone 2, marcasite 2
195	197½	Tan fossiliferous limestone-blue ravellings 60-40, marcasite 1½
197½	200	Blue ravellings-tan limestone 75-25, fossils, marcasite 1½, A [illegible] BROWN
200	202½	Tan fossiliferous limestone-trace blue ravellings-trace dark brown shaly limestone, marcasite 8, [illegible] BROWN CLAY - 202.4'
202½	205	Brown and tan limestone-little blue ravellings, marcasite 3, a [illegible] BROWN CLAY - 202.5'
205	207	Brown and tan limestone-considerable blue ravellings, some green clay and bentonite sloughing, trace calcite, marcasite 1½
207	210	Mostly ravellings from Blue, Gilrock and Claybed-few specks gray dolomitic limestone, trace buff ravellings, marcasite 1 [illegible] - 207'
210	212½	Mostly ravellings from Blue, Gilrock and Claybed-few specks gray dolomitic limestone, marcasite 1
212½	215	Mostly ravellings from Blue, Gilrock and Claybed-few specks gray dolomitic limestone, trace buff dolomite ravellings, marcasite 2
[illegible]	215'	[illegible] t

Driller's remarks: Loose and caving at 105 to 115
Soft 180 to 182½
Firm 182½ to 187
Hard (Gilrock) 187 to 197
Firm (Claybed) 197 to 201
Hard (Glassrock) 201 to 200
(Trenton) 200 to 215

Water at 40 ft. (soak)
" " 65 ft.
" " 95 ft.
" " 113 ft.

Set 140 ft. of 4 7/8 inch pipe

Land Description:
Location of Hole: 75' E. from [illegible] #34

Wisconsin Geologist: R. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: CALVERT ESTATE (Tract #1) Hole No. 36 (DMEA)
Began: 11-22-52, finished 12-3-52 Total Depth 221
Drill Owner: Thomas & Reavis
Drill Runner: Reavis Elev. 978.53
201

From	To	
0	8	Dark brown clay
8	10	Buff dolomite-few specks limonite & marcasite
10	15	Rather dark buff dolomite
15	30	Rather dark buff dolomite
30	35	Rather dark buff dolomite- a speck marcasite
35	45	Rather dark buff dolomite-a speck marcasite & limonite
45	50	Dark buff dolomite
50	60	Rather dark buff dolomite
60	65	Buff & dark buff dolomite-few specks calcite
65	75	Dark buff calcareous dolomite-thin trace limonite
75	80	Dark buff dolomite & brown/buff dolomite-brown & yellow chert 98-2, thin trace limonite DRAB 77½
80	90	Dark buff dolomite & brown/buff dolomite-brown chert 92-8, thin trace limonite
90	95	Dark buff dolomite & brown/buff dolomite-brown & gray/brown chert 97-3, thin trace limonite & marcasite, few specks galena
95	100	Brown dolomite-dark buff dolomite-brown chert 79-20-1, trace marcasite, few specks galena
100	105	Buffish/brown dolomite-brown chert 97-3, few specks limonite, marcasite & galena
105	110	Buffish/brown dolomite-brown chert 96-4, thin trace marcasite
110	115	Buffish/brown dolomite-gray & brown chert 92-8, trace marcasite, a speck galena
115	120	Buff dolomite-brown chert 90-10, trace marcasite
120	125	Buff dolomite-gray/brown dolomite-brown chert 75-23-2, few specks marcasite
125	130	Brown/buff dolomite-brown chert 93-7, few specks marcasite
130	135	Brown/buff dolomite-brown chert 97-3, thin trace marcasite
135	140	Buff dolomite-tan & brown chert 93-7, a speck marcasite
140	145	Buff dolomite-tan & brown chert 94-6, a speck marcasite
145	150	Buff dolomite-brown chert 99-1, a speck limonite & marcasite
150	155	Buff dolomite-dark buff chert 99-1, trace brown chert, limonite ½
155	160	Brown dolomite-light gray & marcasite/speckled chert 92-8, marcasite 12
160	165	Brown dolomite-light gray & marcasite/speckled chert 85-15, marcasite 10
165	170	Brown dolomite-gray & marcasite/speckled chert 90-10, marcasite 9
170	175	Buff dolomite & brown/buff dolomite-brown, gray & tan & buff chert 95-5, marcasite 3
175	177½	Buff dolomite & brown/buff dolomite-buff, gray & tan chert 96-4, trace gray dolomite, marcasite 2
177½	180	Ravellings of buff dolomite & various colored chert 90-gray dolomite 10, marcasite 2½
180	182½	Gray dolomite-ravellings of buff dolomite & chert 75-25, marcasite 2 GRAY 177½
182½	185	Gray dolomite-ravellings of buff dolomite & chert 85-15, marcasite 1
185	187½	Brown/gray dolomite-ravellings of buff dolomite & chert 95-5, marcasite 2

(Continued on next page)

Property Name: CALVERT [illegible] (Tract #1) Hole No. 36 (DETA)
(Continued)

From	To	
197½	190	Brown/gray dolomite-some ravellings of buff dolomite & chert, marcasite 6
190	192½	Gray/brown dolomite-some ravellings of buff dolomite & chert, marcasite 5
192½	195	Gray/brown dolomite-gray dark/speckled dolomite & gray clay 60-40, marcasite 6 BLUE 194
195	197½	Gray dark/speckled dolomite-trace gray clay, marcasite 8, trace calcite
197½	200	Gray dark/speckled dolomite & brown/gray dolomite-some fossils, marcasite 18, blende 1/10
200	202½	Brown fossiliferous dolomitic limestone-gray dark/speckled dolomite 60-40, marcasite 15, blende 2% OIL 201
202½	205	Brown fossiliferous dolomitic limestone-trace brown shaly limestone-marcasite 8, blende 3%
205	207½	Brown fossiliferous dolomitic limestone-gray clay 70-30, marcasite 5, blende 1% CLAY 206.8
207½	210	Gray clay-few coarse chips gray marcasite/speckled dolomite-marcasite 3, blende 6/10, trace phosphate
210	212½	Dark brown dolomite (coarse cuttings)-gray clay 80-20, marcasite 1½, blende 8/10 GLASS 210½
212½	215	Dark brown dolomite-gray dolomitic limestone 80-20, marcasite 2, blende 3/10 WeCYTOOR 214½
215	217½	Gray dolomitic limestone-glassrock ravellings 5, marcasite 3, blende 4/10
217½	220	Gray dolomitic limestone-glassrock ravellings 4, marcasite 8, blende ½
220	221	Gray dolomitic limestone-glassrock ravellings 4, marcasite 3, blende 3/10

TDM 221.5' WST
Water at 54' from collar

Land Description: SW/NE-1N,1E

Location of Hole: 50' S from DH #32.

ASSAY

		ZnS	FeS_2	PbS
197½	200	0.95	16.80	nil.
200	202½	1.25	14.60	"
202½	205	1.55	10.50	"
205	207½	2.90	11.90	"

Analyzed by: Harold Erwin
12-31-52

Driller's Remarks: Sandy lime-some caving 130-150; Red clay & buff sandy lime 150-155; hard formation 179-194; soft formation 194-199; hard 199-205; soft formation 205-212. Weak water at 32'; water at 65'; strong water at 138'.

Wisconsin

Geologist: H. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: CALVERT MEADOW (Tract #1)
Began: 12-6-52, finished 12-12-52
Drill Owner: Thomas & Reavis
Drill Runner: R. Reavis

Hole No. 37
Total Depth 230

Elev. _____

205
777½

From	To	
0	5	Black soil
5	10	Brown clay
10	15	Buff clay-buff dolomite 80-20
15	20	Buff dolomite-trace limonite
20	25	Buff dolomite-trace limonite
25	40	Buff dolomite-few specks limonite
40	50	Buff dolomite-few specks marcasite
50	60	Dark buff dolomite
60	70	Dark buff dolomite-trace limonite
70	75	Buff & brown/buff dolomite-limonite 2, few specks marcasite
75	80	Brown/buff, brown, & buff dolomite-limonite 1, marcasite 1/10, few specks galena
80	85	Brown & buffish/brown dolomite-brown chert 98-2, limonite & marcasite 2/10, a speck galena DRAB 82½
85	90	Brown dolomite-gray/brown & brown chert 94-6, limonite & marcasite 3/10, few specks galena
90	95	Brown dolomite-gray/brown, tan & marcasite/speckled chert 90-10, galena 1/10
95	100	Brown dolomite-gray/brown, tan & marcasite/speckled chert 88-12, marcasite ½, trace galena
100	110	Brown dolomite-gray/brown & tan chert 90-10, marcasite 3/10, few specks galena
110	115	Pale brown dolomite-gray & gray/brown chert 92-8, marcasite ½
115	120	Brown/gray dolomite-gray chert 96-4, limonite/stained clay 5, marcasite 3/10, few specks galena
120	125	Gray/brown dolomite-gray chert 97-3, limonite/stained clay 1, marcasite 2, few specks galena
125	130	Gray/brown dolomite-gray chert 95-5, marcasite 1½, few specks galena
130	140	Pale brown dolomite-gray chert gray shale 95-2-3, marcasite 3, few specks galena
140	150	Brown dolomite-gray dolomite-gray chert 93-5-2, marcasite 4
150	160	Brown dolomite-dark buff dolomite-light gray chert 94-5-1, few specks gray shale, marcasite 5
160	170	Buff dolomite-tan & gray/brown chert 85-15, trace brown/buff clay, marcasite 6/10, a speck galena
170	175	Buffish/brown dolomite-tan & brown chert 86-14, marcasite 8/10
175	180	Brown dolomite-gray chert 95-5, marcasite 1
180	182½	Pale brown dolomite-few specks calcite, marcasite 2
182½	185	Pale brown dolomite-few specks calcite, marcasite 4
185	187½	Brown/gray dolomite-dark buff dolomite 98-2, marcasite 5 GRAY 185
187½	190	Brown/gray dolomite-dark buff dolomite 99-1, marcasite 5
190	192½	Brown/gray dolomite-dark buff dolomite 92-8, marcasite 7
192½	195	Gray/brown dolomite-dark buff dolomite 95-5, calcite ½, marcasite 5, blende 1/10
195	197½	Brown dolomite-calcite 2, marcasite 6, blende 1/10
197½	200	Brown dolomite-gray clay 95-5, calcite 2, marcasite 1, trace blende BLUE 199.9

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #1) Hole No. 37 (Continued)

From	To	
200	202½	Brown/gray dark/speckled dolomite-calcite 1, marcasite 3, blende 6/10
202½	205	Gray dark/speckled dolomite-brown dolomite 95-5, gray clay 3, marcasite 4, blende 1%
205	207½	Brown & tan fossiliferous dolomitic limestone-trace brown shale, marcasite 2, blende 7/10 OIL 205
207½	210	Tan fossiliferous limestone-brown shale 98-2, marcasite 1, blende 4/10
210	212½	Gray/brown fossiliferous limestone-gray clay 90-10, brown shale 3, marcasite 1, blende 8/10 CLAY 212.2
212½	215	Green clay-gray/brown fossiliferous limestone-trace phosphate, marcasite 8/10, blende 2/10 GLASS 215.5
215	217½	Dark brown dolomite (coarse cuttings)-gray clay 90-10, marcasite 7/10, blende 4/10 McGREGOR 218.5
217½	220	Gray dolomitic limestone-dark brown dolomite 60-40, marcasite ½, blende 1/10, trace calcite
220	222½	Gray dolomitic limestone-marcasite 2/10, trace blende
222½	225	Gray dolomitic limestone-marcasite 3/10, blende 1/10
225	227½	Tan limestone & gray dolomitic limestone-marcasite 3/10, trace blende
227½	230	Gray limestone-marcasite 1/10, few specks blende

TDW 231.4' w s t
water at 58'

Land Description: NW/NE, 1N, 1E
Location of Hole: 200' E from DH #31

ASSAY

		ZnS	FeS_2	PbS
200	202½	1.55	4.70	nil.
202½	205	2.15	9.30	"
205	207½	1.25	4.50	"
207½	210	1.05	3.00	"
210	212½	1.35	3.20	"

Analyzed by: Harold Erwin

1-3-53

Wisconsin Geologist: H. W. Davis

DRILL RECORD
The Eagle Picher Company

Property Name: CALVERT [illegible] (Tract #1)
Begun: 12-15-52, finished 12-27-52
Drill Owner: Thomas & Reavis
Drill Runner: Ray Reavis
Location: 150' E & 50' N from DH #29

Hole No. 38 (DMEA)
Total Depth 211
Elev. 973.33 ~~795~~ 778

From	To	
0	5	Soil
5	10	Brown clay-trace buff dolomite
10	20	Buff dolomite-trace limonite
20	30	Buff dolomite-trace limonite
30	40	Buff dolomite-limonite 2/10
40	50	Buff dolomite-trace limonite
50	60	Coarse cuttings: Buff dolomite-brown clay 1, few specks limonite
60	65	Coarse cuttings: Dark buff dolomite-trace limonite
65	70	Coarse cuttings: Buff & dark buff dolomite-trace limonite
70	75	Dark buff dolomite-a speck brown chert-limonite stained clay & brown clay 3, limonite 2/10
75	80	Buff dolomite-brown chert & dark buff chert-brown clay 90-7-3, limonite 3/10 DRAB 75
80	85	Buff dolomite-brown chert & dark buff chert 82-18, limonite 4/10
85	90	Buff dolomite-dark brown chert 92-8, galena 7/10
90	95	Coarse cuttings: Buff dolomite-dark brown chert 93-7, gray/brown dolomite 1, galena 1½%
95	100	Some Coarse Cuttings: Buff dolomite-brown & dark brown/buff chert 90-10, galena 2/10, trace marcasite
100	105	Buff dolomite-dark brown/buff chert 82-18, brown & limonite/stained clay 4, galena 4/10
105	110	Buff dolomite-dark brown/buff chert-gray/brown dolomite 80-15-5, trace galena
110	120	Buff dolomite-brown buff chert 93-7, thin trace galena
120	130	Buff dolomite-light brown & buff chert 90-10, thin trace galena
130	140	Buff dolomite-few specks tan chert-trace galena
140	150	Buff dolomite-tan chert 92-8, very thin trace galena
150	160	Dark buff dolomite-tan chert 94-6, marcasite 2/10, a speck galena
160	165	Coarse cuttings: Brown dolomite-gray/brown & tan chert-buff dolomite70-25-5, marcasite 1
165	167½	Brown dolomite-dark buff dolomite-tan & brown chert 60-30-10, marcasite 4
167½	170	Brown dolomite-dark buff dolomite-tan & brown chert 50-30-20, marcasite 6
170	172½	Brown dolomite-tan & brown chert-dark buff dolomite 70-27-3, marcasite 8
172½	175	Brown dolomite-tan & brown chert-dark buff dolomite 75-20-5, marcasite 7
175	177½	Brown dolomite-tan & brown chert-dark buff dolomite 80-16-4, marcasite 6 GRAY 175 ?
177½	180	Brown dolomite-tan & brown chert-dark buff dolomite 85-10-5, trace gray dolomite-marcasite 4, blende 1/10
180	182½	Mostly brown dolomite & chert ravellings-few coarse cuttings, gray marcasite/speckled dolomite, marcasite 8, trace blende
182½	185	Mostly brown dolomite & chert ravellings-little gray marcasite/speckled dolomite - blue/gray clay; marcasite 5, few specks blende

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #1) Hole No. 39 (DMEA)
(Continued)

From	To	
185	187½	Mostly brown dolomite & chert & dark buff dolomitic ravellings-trace gray marcasite/speckled dolomite, marcasite 4, speck blende
187½	190	Mostly brown dolomite & chert & dark buff dolomitic ravellings-gray clay 2, little gray dark/speckled dolomite, marcasite 3, few specks blende BLUE 189 ?
190	192½	Ravelling from overlying beds-gray dark/speckled dolomite 98-2, marcasite 2½, few specks blende
192½	195	Ravelling from overlying beds-trace brown clay, few specks gray dark/speckled dolomite-marcasite 3, speck blende
195	197½	Brown dolomitic ravellings & a trace of chert ravelling-tan oilrock limestone1, marcasite 8, few specks blende OIL 195 ?
197½	200	Mostly brown dolomitic ravellings-tan limestone 3, trace gray marcasite/speckled dolomitic ravellings, trace calcite, marcasite 15, speck blende
200	202½	Mostly brown dolomite & gray marcasite/speckled dolomitic ravellings, tan limestone 1, dark gray fossiliferous limestone 1, calcite 1, a speck phosphate, marcasite 7, few specks blende CLAYBED 201½ ?
202½	205	Mostly brown dolomite & gray marcasite/speckled dolomitic ravellings, light brown glassrock limestone 4, trace gray clay, trace dark gray fossiliferous limestone & green shale, calcite ½, marcasite 10, trace blende GLASS 203 ?
205	207	Brown dolomite & gray marcasite/speckled dolomite ravellings-brown Glassrock limestone 85-15, marcasite 7, trace blende, trace calcite
207	208½	Gray marcasite/speckled dolomitic ravellings-brown limestone 80-20, trace dark brown shale, trace calcite, marcasite 8, trace blende
208½	211	Gray marcasite/speckled dolomitic ravellings-brown & dark brown limestone 75-25, trace calcite, marcasite 8, trace blende McGREGOR ?????

TDM 211.0' N.S.T.
Water at 49'

Extremely loose formation. Would have been cased if a solid formation was found. Formation 'Tops' cannot be called with any degree of accuracy. Driller reported sticky clay-like formation 208½-211 & some light gray clay stuck to bit-none found in sample.

ASSAY

		ZnS	FeS_2	PbS
85	90	0.20	3.90	4.95
90	95	0.30	3.90	3.22

Analyzed by: Harold Erwin

1-3-53

Description of Land: NW¼-NE¼, 1N, 1E
Location of Hole: 150' E & 50' N from DH #29.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 39 (DMSA)

Property Name: CALVERT ESTATE (Tract #1)
Began: 12-29-52 Finished: 1-14-53
Drill Owner: Thomas & Reavis
Drill Runner: Ray Reavis Elevation 965.7

191
775

DEPTH From	To	DESCRIPTION
0	5	Brown clay, fine buff dolomite 80-20
5	10	Dark brown clay & reddish-brown clay 50-50, fine buff dolomite 10
10	15	Dark buff dolomite (Coarse), brown clay 95-5, few specks limonite
15	20	Dark buff dolomite, few specks limonite & marcasite
20	25	Dark buff limonite-speckled dolomite, few coarse chips limonite
25	40	Dark buff limonite-speckled dolomite, few coarse chips limonite
40	45	Dark buff dolomite, trace brown-buff clay, a speck marcasite
45	50	Dark buff dolomite
50	60	Dark buff dolomite
60	65	Dark buff dolomite, brown-buff dolomite 80-20
65	70	Dark buff dolomite & brown-buff dolomite, brown chert 98-2 DRAB - 67½
70	75	Coarse cuttings: Buff dolomite, brown chert 94-6, trace dark gray clay
75	80	Coarse cuttings: Buff dolomite & brown dolomite, dark brown chert & brown chert 82-18, dark gray clay 1, few specks marcasite
80	85	Dark buff dolomite, gray & dark brown clay, brown chert 89-8-3, few specks marcasite
85	90	Dark buff dolomite, brown chert, gray clay 94-5-1, few specks marcasite
90	95	Buffish-brown dolomite, brown & gray chert, dark gray clay 83-15-2, a speck marcasite
95	100	Brown-buff dolomite, dark brown-buff chert, dark gray clay 92-5-3, a speck marcasite
100	105	Brown-buff dolomite, brown chert 70-30
105	110	Buff dolomite, dark buff chert 92-8, trace dark gray clay, few specks marcasite
110	115	Buff dolomite, brown & buff chert 88-12, few specks marcasite
115	120	Buff dolomite, buff chert 92-8, a speck galena, few specks marcasite
120	130	Buff dolomite, buff, brown & tan chert 90-10, dark gray clay 1
130	140	Buff dolomite, buff & brown chert 93-7, dark gray clay 1, few specks marcasite
140	150	Buff dolomite, brown chert 99-1, dark gray clay 5, few specks marcasite
150	155	Buff dolomite, buff & brown chert, dark gray clay 50-45-5, few specks marcasite
155	160	Brown & buff chert, dark buff dolomite 60-40, few specks marcasite

(Continued on next page)

Property Name: CALVERT ESTATE)Tract #1)

From	To	
160	165	Buff & tan chert, dark buff dolomite 85-15, few specks marcasite
165	167½	Coarse cuttings: Dark buff dolomite, brown & tan chert 80-20, a speck limonite & marcasite
167½	170	Coarse cuttings: Dark buff dolomite, brown chert 92-8, trace dark gray clay, a speck marcasite
170	172½	Coarse cuttings: Dark buff dolomite, brown chert 96-4, trace dark gray clay, a few coarse cuttings appear to be oxidized "Gray" dolomite GRAY - 170 ?
172½	175	Coarse cuttings: Buff dolomite, pale green clay 95-5, brown chert ravellings 4, limonite (coarse) 3
175	177½	Dark buff dolomite & pale buff dolomite, brown chert ravellings 5, trace gray clay, limonite 8/10
177½	180	Buff dolomite, chert ravellings 6, trace limonite
180	182½	Buff dolomite & brown chert ravellings 90-10, few specks limonite & marcasite
182½	185	Buff dolomite & brown chert ravellings, dark gray dolomite & gray clay 95-5, marcasite 3 BLUE - 184
185	187½	Dark buff dolomite, dark gray marcasite-speckled dolomite 85-15, marcasite 2
187½	190	Coarse cuttings: Dark buff dolomite & brown chert ravellings, dark gray marcasite-speckled dolomite 60-40, marcasite 20
190	192½	Coarse cuttings: Dark buff dolomite & brown chert ravellings, marcasite 10 OIL - 191 (?)
192½	195	Dark buff dolomite, & brown chert ravellings, trace tan fossiliferous limestone & brown clay, marcasite 4
195	197½	Dark buff dolomite & brown chert ravellings, trace tan fossiliferous limestone, green clay 25, marcasite 3
197½	200	Green clay, buff dolomite & brown chert ravellings 80-20, marcasite 1, a speck blende GRAY - 197
200	202½	Dark buff dolomite & brown chert ravellings, dark brown dolomite, marcasite 6, few specks blende GLASS - 200 ?
202½	205	Dark buff dolomite & brown chert ravellings 98-2, few coarse chips brown-gray limestone, marcasite 4/10, specks calcite
205	207½	Dark buff dolomite & chert ravellings, gray dolomitic limestone 95-5, a speck chocolate brown shale, marcasite 3/10

Total depth measured 208.0' with steel tape
Water at 41' from collar

Land Description: Northwest ¼ of Northeast ¼

Location of Hole: 90' North from Drill Hole #29

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 40

Property Name: CALWERT ESTATE (Tract #1)
Began: 1-16-53 Finished: 1-23-53
Drill Owner: Thomas & Reavis
Drill Runner: Ray Reavis

242.5
779

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	15	Brown clay
15	20	Buff dolomite, trace limonite
20	30	Buff dolomite, trace limonite, a speck marcasite
30	45	Buff dolomite, few specks limonite
45	60	Buff dolomite
60	75	Buff dolomite
75	90	Buff dolomite
90	100	Buff dolomite, few specks limonite
100	105	Buff & brown-buff dolomite, a speck limonite
105	110	Buff & brown-buff dolomite, a speck limonite
110	115	Brown-buff dolomite & buff dolomite
115	120	Brown dolomite, a speck brown chert, thin trace marcasite
120	125	Brown dolomite, gray-brown chert 94-6, trace marcasite DRAB - 120
125	140	Brown dolomite, gray-brown & dark gray chert 92-8, marcasite 4/10
140	150	Brown dolomite, gray chert 96-4, trace tan chert, marcasite 4/10
150	160	Brown-gray dolomite, light gray & white chert 90-10, marcasite 7/10
160	170	Gray-brown dolomite, gray & light gray chert 92-8, marcasite 5/10
170	180	Brown dolomite, gray-brown chert 95-5, marcasite 4/10
180	185	Brown dolomite, white & tan chert 96-4, marcasite 1/10
185	195	Fine Cuttings: Brown dolomite, tan chert 99-1, marcasite 3/10
195	205	Brown dolomite, tan & light brown chert 90-10, trace calcite, marcasite 2/10
205	210	Brown dolomite, tan & light brown chert 94-6, marcasite 4/10
210	215	Brown dolomite, tan chert 97-3, marcasite 3/10
215	220	Brown dolomite, trace calcite, marcasite 6/10
220	225	Gray dolomite, brown dolomite 90-10, marcasite 5/10 (fine cuttings) GRAY - 220½)
225	230	Gray dolomite, marcasite 4/10
230	232½	Brown-gray dolomite, few specks calcite, marcasite 2/10
232½	235	Brown-gray dolomite, marcasite 3/10
235	237½	Gray dark-speckled dolomite, brown-gray dolomite 80-20, marcasite 3/10 BLUE - 235½
237½	240	Gray dark-speckled dolomite, marcasite 1/10
240	242½	Dark gray dark-speckled dolomite, trace gray clay, marcasite 1/10
242½	245	Tan fossiliferous limestone, gray dark-speckled dolomite 90-10, marcasite 1/10 OIL - 242.7
245	250	Brown & tan fossiliferous limestone, trace brown shale, marcasite 1/10

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #1)

From	To	
250	255	Brown limestone, dark brown shaly limestone 97-3, trace marcasite
255	257½	Gray fossiliferous limestone, trace marcasite
257½	260	Gray-brown limestone, dark gray fossiliferous limestone 70-30, trace marcasite CLAY - 257½
260	262½	Brown limestone, some bentonite & dark gray fossiliferous limestone, trace marcasite GLASS - 258½
262½	265	Brown & tan limestone, trace dark brown shale, trace marcasite
265	267½	Dark brown & tan limestone, trace chocolate brown shale, trace marcasite
267½	270	Brown limestone, gray limestone & dolomitic limestone 60-40, chocolate brown shale 1, trace marcasite McGREGOR - 269
270	271	Gray dolomitic limestone, gray shale 95-5, trace marcasite

Total depth measured 271.5' with steel tape.
Water 90'
Driller's remark: GOOD drilling hole.

Land Description: Southwest ¼ of Northeast ¼

Location of Hole: 250' North & 100' East from center of Section 7

Geologist R. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 8

Property Name: CALVERT ESTATE, Trace #2
Began: 6-13-52 Finished: 6-19-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis

Total Depth 161
Collar Elev.
Water Level 6'

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Buff clay
10	20	Buff sandy clay
20	25	Buff sandy clay, trace brown & tan chert DRAB - 20
25	30	Tan dolomite, white chert 98-2, trace marcasite
30	40	Tan dolomite, white chert 96-4, marcasite & limonite ½
40	50	Light brown dolomite, light brown chert 99-1, marcasite 1/10
50	60	Pale gray dolomite, white chert 94-6, trace marcasite
60	70	Light brown dolomite, gray & tan chert 98-2, trace marcasite
70	75	Brown dolomite, gray & tan chert 99-1, trace marcasite
75	80	Brown dolomite, tan chert 97-3, trace marcasite
80	90	Light brown dolomite, trace chert, trace marcasite
90	100	Light brown dolomite, gray & tan chert 98-2, trace marcasite
100	105	Brown dolomite, brown & gray chert 97-3, trace marcasite
105	110	Brown dolomite, brown & tan chert 97-3, trace marcasite
110	115	Gray-brown dolomite, brown dolomite 80-20, trace marcasite GRAY - 111
115	117½	Gray dolomite, few specks marcasite
117½	120	Gray-brown dolomite, a speck calcite, few specks marcasite
120	122½	Gray dolomite, trace calcite, thin trace marcasite
122½	125	Dark gray-brown dolomite, few specks marcasite
125	127½	Gray-brown dolomite, gray dark-speckled dolomite 60-40, few specks marcasite BLUE - 126.5
127½	130	Gray dark-speckled dolomite, marcasite 1/10
130	132½	Gray-brown dark-speckled dolomite, trace calcite, thin trace marcasite
132½	135	Brown & tan fossiliferous limestone, gray dark-speckled dolomite 80-20, marcasite 1/10 OIL - 133
135	137½	Brown & tan fossiliferous limestone, few specks marcasite
137½	140	Brown & tan fossiliferous limestone, few specks marcasite
140	142½	Brown & tan fossiliferous limestone, dark brown shale 5, trace marcasite
142½	145	Brown & tan fossiliferous limestone, dark brown shale 3, trace marcasite
145	147½	Gray-brown dark-speckled fossiliferous limestone, brown & tan limestone 20, trace marcasite
147½	150	Gray-brown dark-speckled fossiliferous limestone, brown & tan limestone 35, few specks marcasite
150	150½	Gray-brown & tan limestone, black fossiliferous limestone 50-50, trace green shale, marcasite 1/10 CLAY - 150
150½	152½	Dark brown dolomite limestone, tan dark-speckled shale limestone 50-50, green shale 1, trace marcasite GLASS - 150.5

(Continued on next page)

Property Name: CALVERT ESTATE, Tract #2

From	To	
152	155	Dark brown dolomite limestone, tan dark-speckled shale limestone 60-40, green shale 3, trace marcasite
155	157½	Brown & light brown limestone, green shale 1, dark brown shale 4, trace marcasite
157½	160	Brown & light brown limestone, few specks gray shale limestone, trace green shale & brown shale, few specks marcasite
160	161	Brown dolomite limestone, gray dolomite limestone 60-40, brown shale 3, green shale 1, trace marcasite

McGREGOR - 160.5

Total depth measured 162.0' with steel tape

Land Description: SW¼ of NW¼ of Sec. 8 T-1-N R-1-E of 4th PM

Location of Hole: 1180' N & 500' E from SW corner of NW¼ of Sec. 8.

Geologist: E. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 3

Property Name: CALVERT ESTATE, TRACT #2
Began: 6-20-52 Finished: 6-23-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis

Total Depth 175

Collar Elevation _____
Water Level 51'

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	20	Brown sandy clay
20	25	Brown dolomite, few specks brown chert
25	35	Brown dolomite, gray & brown chert 98-2, few specks marcasite, a speck galena, brown clay 30 DRAB - 25
35	45	Brown dolomite, gray & brown chert 96-4, trace marcasite, few specks galena
45	55	Brown dolomite, gray & brown chert 99-1, trace marcasite, few specks galena
55	65	Light brown dolomite, gray & tan chert 90-10, trace marcasite
65	75	Light brown dolomite, gray & tan chert 95-5, trace marcasite
75	85	Light brown dolomite, gray dolomite 94-6, trace marcasite
85	95	Brown dolomite, a speck chert, trace marcasite
95	100	Brown dolomite, few specks tan chert, trace marcasite
100	105	Brown dolomite, gray & tan chert 97-3, trace marcasite
105	110	Brown dolomite, brown & gray chert 90-10, trace marcasite
110	115	Brown dolomite, gray & tan chert 95-5, thin trace marcasite
115	120	Brown dolomite, tan chert 99-1, thin trace marcasite
120	125	Light brown dolomite, thin trace marcasite
125	130	Gray dolomite, brown dolomite 80-20, thin trace marcasite GRAY - 126
130	132½	Gray-brown dolomite, a speck calcite, few specks marcasite
132½	135	Gray-brown dolomite, few specks marcasite
135	137½	Gray-brown dolomite, few specks marcasite
137½	140	Gray-brown dolomite, gray dark-speckled dolomite 60-40, calcite 5, trace gray clay, trace marcasite BLUE - 139
140	142½	Gray dark-speckled dolomite, trace calcite, trace marcasite
142½	145	Gray & gray-brown dark-speckled dolomite, few specks marcasite
145	147½	Gray dark-speckled dolomite, trace gray clay, few specks marcasite
147½	150	Light brown & tan limestone, few specks marcasite OIL - 147.5
150	152½	Light brown & tan limestone, dark brown limy shale 10, few specks marcasite
152½	155	Brown & tan limestone, dark brown limy shale 15, few specks marcasite
155	157½	Brown & tan limestone, dark brown shaly limestone 5, few specks marcasite
157½	160	Brown & tan limestone, gray-brown fossiliferous limestone 20, few specks marcasite
160	162½	Black fossiliferous limestone & green shale, brown fossiliferous limestone, brown & tan limestone 40-40-20, few specks marcasite CLAY - 161

(Continued on next page)

Property Name: CALVERT ESTATE, tract #3

From	To	
162½	165	Brown & tan limestone, trace dark brown shale, few specks marcasite GLASS - 162
165	167½	Brown & tan limestone, trace dark brown shale, trace marcasite
167½	170	Brown & tan limestone & brown dolomite limestone, dark brown shale 2, few specks marcasite
170	172½	Brown & tan limestone, dark brown shale 4, few specks marcasite
172½	175	Gray dolomite limestone, green shale 2, brown & dark brown limestone 5, few specks marcasite McGREGOR - 172.5

Total depth measured 176.5' with steel tape.

Land Description: NW¼ of NW¼ of Sec. 8 T-1-N R-1-E of 4th PM

Location of Hole: 1700' N & 700' E from SW corner of NW¼ of Sec. 8.

Logged by: E. J. Poehlmann

Geologist: E. J. Poehlmann

Hole No. 4

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

Property Name: Calvert Estate tract # 2 — Total Depth 195'
Began: 6-27-52 Finished: 7-1-52 — Water Level 67'
Drill Owner: Howard Thomas — Struck Water
Drill Runner: Ray Reavis

Collar Elevation

From	To	
0	5	Brown soil.
5	20	Buff sandy clay, few specks limonite.
20	30	Buff dolomite, buff clay 40-[illegible], few specks limonite.
30	40	Buff dolomite, buff clay 80-[illegible], few specks limonite, a [illegible].
40	50	Buff dolomite, buff clay 80-[illegible], trace limonite, a [illegible].
50-	55	Buff dolomite, buff clay 80-1[illegible], trace limonite.
55	60	Light brown/buff dolomite, brown & tan chert 90-[illegible], trace limonite. DRAY 55
60	70	Light brown dolomite, brown & tan chert 90-[illegible], trace limonite.
70	80	Light brown dolomite, brown & tan chert 9[illegible]-[illegible], trace brown clay, trace limonite.
80	90	Light brown dolomite, brown dolomite 9[illegible]-1, trace limonite.
90	100	Light brown dolomite, brown & tan chert 92-[illegible], dark brown shally dolomite 10, trace limonite.
100	110	Light brown dolomite, brown & tan chert 90-1, dark brown shalely dolomite [illegible], trace limonite.
110	120	Light brown dolomite, light brown chert 97-[illegible], trace dark brown shaley dolomite, few specks limonite.
120	130	Light brown dolomite, brown & tan chert 9[illegible]-2, limonite & marcasite [illegible].
130	135	Brown dolomite, trace brown & tan chert, limonite & marcasite [illegible].
135	140	Brown dolomite, dark brown & gray chert (marcasite/specks) 80-20.
140	145	Light brown dolomite, tan chert 9[illegible]-1, marcasite [illegible], limonite 3
145	150	Gray dolomite, light brown dolomite 60-40, marcasite [illegible], limonite 5. GRAY 145
150	155	Gray dolomite & light brown & buff dolomite, marcasite 1½ limonite 3
155	157½	Gray dolomite & light brown & buff dolomite, marcasite 1 limonite 1
157½	160	Gray/brown & buff dolomite, marcasite 1½, limonite 1
160	162½	Dark brown dolomite & gray clay, marcasite 1½ BLUE 160
162½	165	Gray dark/specks dolomite & clay, marcasite 1
165	167½	Gray dark specks dolomite & clay, & some brown dolomite, marcasite 1
167½	170	Brown & tan fossiliferous dolomite limestone, dark brown shale 10, marcasite [illegible] GRAY 167.5
170	172½	Tan fossiliferous limestone, dark brown shale 5, marcasite 1
172½	175	Tan fossiliferous limestone, dark brown shale 8, marcasite 1½, few specks galena.
175	177½	Green shale & gray clay, tan limestone 80-20, trace phosphate, marcasite 1½ GRAY 175.5

Property Name: Calvert Estate, tract # 2 (Continued)

From	To	
177½	180	Brown & light brown dolomite limestone, green shale 1, calcite 4, marcasite 2 GLASS 177.5
180	182½	Small recovery brown dolomite limestone & gray brown shale, marcasite 10
182½	185	Gray dolomite limestone, brown dolomite limestone & dark brown shale 15, marcasite 1 [illegible]
185	187½	Gray dolomite limestone, brown dolomite limestone & dark brown shale 5, marcasite 2, green shale 1
187½	190	Gray dolomite, limestone, brown dolomite limestone & dark brown shale 10, trace green shale, marcasite 1/10.
190	192½	Gray dolomite limestone, dark brown shale 15, green shale 1, trace marcasite.
192½	195	Gray dolomite limestone, dark brown shale 5, green shale ½, trace marcasite.

T. D. [illegible] 195.5' W.S.L.

Signature: Edwin C. Poehlmann

Land Description: SE¼ of NW¼ of Sec 8 T-1N R-1-E of 4th P.M.

Location of Hole: 500' S of DH # 1.

Wisconsin

DRILL RECORD

The Eagle-Picher Company--Mining & Smelting Division

Property Name: CALVERT ESTATE Tract #2
Began: 7-2-52, finished 7-11-52
Drill Owner: Howard Thomas
Drill Runner (Day): Ray Reavis

Hole No. 5
Total Depth 165'
Water level 63'

Elev._____

From	To	
0	5	Soil & brown clay
5	20	Buff dolomite & buff clay
20	25	Buff dolomite, buff clay 10
25	40	Buff dolomite
40	45	Buff dolomite-buff & tan chert 99-1 DRAB 44
45	50	Buff dolomite-buff & tan chert 97-3, few specks limonite & marcasite
50	60	Buff dolomite-brown & buff chert 92-8, limonite & marcasite ½
60	70	Light brown dolomite-dark brown & brown chert 95-5, limonite & marcasite 3/10
70	80	Light brown dolomite-gray & tan chert 96-4, limonite & marcasite 1
80	90	Brown/buff dolomite-brown & tan chert 94-6, limonite & marcasite ½
90	100	Pale buff dolomite-trace tan chert, light brown clay 5, limonite & marcasite ½
100	110	Buff dolomite-trace tan chert, light brown clay 1, trace limonite & marcasite
110	115	Buff limonite/stained dolomite, trace tan chert, trace brown clay, trace limonite & marcasite
115	120	Pale brown dolomite-brown chert 99-1, brown clay 4, trace limonite & marcasite
120	125	Buff limonite/stained dolomite-brown chert 97-3, few specks limonite
125	130	Brown/buff dolomite-brown & gray chert 85-15, trace limonite, marcasite 1
130	135	Light brown to brown dolomite-brown & gray chert 94-6, marcasite 2
135	137½	Buff to brown dolomite-brown & buff chert 93-7, marcasite ½
137½	140	Buff dolomite, gray/brown dolomite 1[illegible], brown chert 2, marcasite 1½
140	142½	Brown/buff dolomite & brown dolomite-brown & tan chert 97-3, marcasite 2
142½	145	Pale buff & gray/brown dolomite, trace chert, gray clay 3, marcasite ½ GRAY 142½-145
145	147½	Red clay & pale buff dolomite, marcasite ½
147½	152½	Pale buff dolomite, trace brown dolomite, gray/brown dolomite, gray clay, brown clay, marcasite ½
152½	155	Pale brown dolomite, few specks gray dolomite, gray clay 1, brown clay 1, marcasite 1, red mud 70%
155	157½	Light brown dolomite, gray clay 15, brown clay 3, marcasite ½, red mud 50% BLUE 156-157½
157½	160	Light brown dolomite (limy?) brown clay 10, trace gray clay, marcasite 1, 40% mud
160	162½	Light brown dolomite (limy?) brown clay 20, marcasite 1, 40% mud
162½	165	Light brown flaky limestone, brown clay 1, marcasite ½, 40% red mud OIL 162½-165

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Property Name: CALVERT ESTATE Tract #2 Hole No. 5
(Continued)

From	To	
165	167½	Light brown flaky limestone, brown clay 4, marcasite ½, 40% red mud
167½	170	Light brown limestone (some fossils) light gray bentonite clay 4, trace marcasite, 90% mud CLAY (in this run)
170	172½	Light brown limestone, a speck brown dolomitic limestone? brown clay 3, trace marcasite, 80% mud
172½	175	Light brown dolomitic limestone, trace light brown limestone, trace light brown & dark brown dolomitic limestone & brown shale, marcasite 3, a speck [illegible]
175	177½	Light brown to tan flaky limestone, brown shale 5, a speck gray clay, marcasite ½ GLASS 17[illegible]-172½
177½	180	Buff limonite/stained dolomite & clay, some light brown limestone, dark brown shale & bentonite clay, trace gray/brown dolomite, marcasite ½
180	182½	Gray dolomitic limestone & light brown/buff dolomitic limestone, marcasite & limonite 1 McGREGOR 181½
182½	185	Gray dolomitic limestone & light brown/buff dolomitic limestone, marcasite & limonite 1

T.D.H. 184.8' w.s.t.

No Assays.

Signature: Edwin J. Roehlmann

Land Description: SW¼-NW¼ of Sec. 8, T-1-N, R-1-E of 4th P.M.

Location of Hole: 200' W from DH #4.

Wisconsin

Geologists: Davis
Poellmann

DRILL RECORD
The Earle-Picker Company
Mining & Smelting Division

Property Name: CALVERT [illegible] Tract #3 — Hole No. 15
Began: [illegible], finished [illegible] — Total Depth 110
Drill Owner: [illegible]
Drill Runner: Davis — File No. _____

From	To	
0	5	Brown soil & brown clay
5	20	Brown & buff clay, some buff dolomite & chert
20	35	Brown clay, buff dolomite & brown & gray chert 5
35	50	Brown clay, buff dolomite & brown, gray & tan chert 45, few specks limonite
50	60	Buff dolomite-brown, gray & tan chert 25-5, brown clay 15, speck limonite
60	70	Buff dolomite-brown, gray & tan chert [illegible], trace limonite
70	80	Buff dolomite-brown, gray & tan chert [illegible], trace limonite
80	85	Buff dolomite-brown, gray & tan chert [illegible], trace limonite
85	90	Dirty limonite stained buff dolomite, buff dolomite 1, tan chert 3, limonite 1/2
90	100	Dirty limonite stained buff dolomite, buff dolomite 8, tan chert & limonite 1/2
100	110	Yellow buff & light brown dolomite-tan chert [illegible], calcite 2, limonite 1/2
110	115	Buff to brown dolomite, calcite 1/2, trace chert, limonite [illegible]
115	117½	Buff to brown dolomite, trace calcite & chert, trace limonite
117½	120	Dark brown to light brown chert & dolomite, trace limonite
120	122½	Brown dolomite-light tan dolomite, [illegible] ? 2, (looks like [illegible])
122½	125	[illegible] limonite [illegible]
125	127½	[illegible] limestone, limonite 1/2
127½	130	[illegible] dark gray, tan [illegible], buff & brown dolomite, limonite 1/2 CLASS 130
130	132½	Brown & tan fossiliferous limestone, buff limonite stained dolomite 10, limonite 1/2
132½	135	Tan limestone, buff limonite stained dolomite [illegible], limonite 1/2
135	137½	Tan limestone, buff limonite stained dolomite 5, trace limonite, speck marcasite
137½	140	Tan limestone-brown dolomitic limestone [illegible], trace limonite, few specks marcasite
140	142½	Tan limestone-brown dolomitic limestone [illegible], few specks marcasite
142½	145	Light gray/brown fossiliferous limestone, gray/brown shale 5, few specks marcasite CLASS 145
145	147½	Brown & tan fossiliferous limestone, trace green shale & black fossiliferous limestone, specks marcasite
147½	150	Limestone & tan fossiliferous limestone, few specks green shale, specks marcasite
150	152½	tan limestone, trace brown limestone, green shale 1, few specks marcasite
152½	155	Tan limestone, brown limestone 5, green shale 2, few specks marcasite

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Property Name: CALVERT ESTATE Tract #[illegible]

Hole No. 15
(Continued)

From	To	
155	157½	Light brown [illegible] tan limestone, little brown shale 1, few specks marcasite
157½	160	Gray dolomitic limestone, few specks marcasite

T. D. N. 161.[illegible]' s.[illegible]. Water at 60'.

Land Description: [illegible]/SE Sec. [illegible], 1- -1-[illegible].

Location of Hole: 700' S [illegible] 3[illegible]' E from center of Sec. [illegible].

Geologist: Davis & Poehlmann

Hole No. 16

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

Property Name: Calvert Estate tract # 3 — Total Depth 149.5'
Begin: 7-29-52 Finished: 8-1-52 — Water level 49'
Drill Owner: Thomas
Drill Runner: Reavis — Collar Elevation

From	To	
0	5	Soil
5	15	BRown & buff clay
15	30	Buff clay, buff dolomite & brown & tan chert 20
30	45	Buff clay, buff dolomite & brown & tan chert 45
45	50	Buff dolomite, tan chert 80-2
50	65	Buff dolomite, brown & tan chert 98-5, few specks limonite.
65	70	Buff dolomite, tan chert 96-4, few specks limonite, (very small recovery.
70	80	Coarse cuttings, dirty buff dolomite & brown clay, trace limonite.
80	90	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 94-[illegible], trace limonite.
90	100	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 90-[illegible], trace limonite.
100	110	Coarse cuttings, dirty buff dolomite & brown clay, brown & tan chert 99-[illegible], trace limonite.
110	112½	Coarse cuttings brown clay, buff dolomite, gray dolomite & gray dark specks dolomite, trace limonite. [illegible] 112
112½	115	Gray dark specks dolomite, brown chert & buff dolomite 80, trace limonite.
115	117½	Brown chert 80, gray dark specks dolomite 15, buff dolomite 5, trace limonite.
117½	120	Gray dark specks dolomite, brown chert & buff dolomite 80, trace limonite.
120	122½	Brown & tan limestone, gray dark specks dolomite 90-[illegible], trace limonite, Oil 1.0%
122½	125	Brown & tan limestone trace limonite, few specks marcasite.
125	127½	Brown & tan limestone trace limonite, few specks marcasite.
127½	130	Brown & tan limestone trace limonite, few specks marcasite.
130	132½	Brown & tan limestone trace limonite, few specks marcasite.
132½	135	Black fossiliferous limestone, green shale & gray clay, brown tan limestone 40-[illegible]-40 CLAY 137'
135	137½	Gray & tan fossiliferous limestone, gray clay [illegible], trace green shale, trace marcasite. GLASS 135½
137½	140	Brown & light brown dense limestone, dark brown shale 5, trace marcasite.
140	142½	Brown & light brown dense limestone, dark brown shale [illegible], trace marcasite.
142½	145	Brown, gray brown & gray dolomite limestone, trace green shale, few specks marcasite.
145	146½	Brown limestone trace dark brown shale, trace green shale, few specks marcasite.
146½	147½	Gray & gray brown dolomite limestone, brown limestone 60-[illegible], trace marcasite. M & G 147'

T. D. H. 149.5' w.s.t.

Water at 49'

No Assays

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 17

Property Name: CALVERT ESTATE, TRACT #3
Began: 8-2-52 Finished: 8-[illegible]-52
Drill Owner: Howard Thomas
Drill Runner: Ray Reavis

Total Depth 175

Water Level 63'

DEPTH From	DEPTH To	DESCRIPTION
0	5	Brown clay & soil
5	15	Brown clay [illegible] some buff dolomite
15	25	Buff clay, buff dolomite [illegible]
25	35	Buff clay, buff dolomite [illegible]
35	40	Buff dolomite, specks limonite
40	45	Buff dolomite, trace tan chert, specks limonite
45	50	Buff dolomite, brown & tan chert [illegible]
50	60	Buff dolomite, brown & tan chert [illegible]
60	65	Buff dolomite, brown & tan chert [illegible], specks limonite
65	70	Buff dolomite, tan chert [illegible]
70	80	Buff dolomite, brown & tan chert [illegible], few specks limonite
80	90	Buff dolomite, brown & tan chert [illegible], few specks limonite
90	100	Buff dolomite, brown & tan chert [illegible], trace limonite
100	110	Buff dolomite, brown & tan chert [illegible], limonite 3
110	115	Buff dolomite, brown & tan chert [illegible], limonite 4
115	120	Buff limestone - banded dolomite, brown & tan chert [illegible], limonite 1
120	130	Buff limestone - banded dolomite, brown & tan chert [illegible], limonite [illegible], specks marcasite
130	140	Buff limestone - banded dolomite, brown & tan chert [illegible], limonite 1, trace marcasite
140	145	Buff dolomite, gray dolomite [illegible], marcasite [illegible], limonite 2, [illegible]
145	147½	Buff & gray dolomite, brown & tan chert, marcasite [illegible], limonite [illegible], [illegible]
147½	150	Buff & gray dolomite, [illegible] tan chert, gray clay, marcasite [illegible], limonite [illegible], [illegible]
150	152½	Buff [illegible] dolomite, [illegible] tan chert, gray & brown clay 15, marcasite [illegible], limonite [illegible], [illegible]
152½	155	Buff [illegible] dolomite, [illegible] chert, gray dolomite [illegible], marcasite 4, limonite 1, [illegible]
155	157½	Brown & tan limestone, marcasite [illegible], limonite [illegible], [illegible] Black [illegible] CH - 1 ?
157½	160	Brown & tan limestone, buff dolomite, tan chert 1, marcasite 1, limonite 1, [illegible]
160	162½	Green shale & gray clay, brown & tan limestone 1, buff dolomite, tan chert 2, marcasite 1, limonite [illegible], [illegible] specks [illegible] CLAY - [illegible]
162½	165	Brown limestone, buff dolomite, gray clay, brown & tan chert, marcasite 1, trace limonite, [illegible] GLASS - [illegible]
165	167½	Buff & gray dolomite, some brown chert, brown limestone, gray clay, marcasite 3, limonite [illegible], [illegible]

(Continued on next page)

Geologists: Harold [illegible] Davis
Edwin [illegible] Poehlmann

[illegible] 17
[illegible]

Property Name: CALVERT ESTATE, Tract #3

From	To	
167½	170	Brown chert [illegible], buff [illegible] dolomite [illegible], gray dolomite [illegible], trace gray dolomite limestone, marcasite [illegible], limonite [illegible], [illegible]
170	172½	Gray dolomite limestone, brown chert, buff [illegible], marcasite [illegible], limonite [illegible], [illegible] McGee [illegible] - 170
172½	175	Gray dolomite limestone, brown limestone, [illegible], buff dolomite, brown chert, marcasite [illegible], limonite [illegible], [illegible]

Total depth measured 17[illegible]' with steel tape.

Water at 60'

Land Description: Southeast ¼ of Section [illegible]

Location of Hole: North 70° East 5[illegible]' from drill hole #3

Geologists: Davis & Foehlmann

Hole No. 18

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

Property Name: Calvert Estate Tract # 3 Total Depth 131.[illegible]'
Began: Aug 7-1952 Finished: Aug 9-1952
Drill Owner: Thomas
Drill Runner: Reavis

From	To	
0	5	Black soil
5	10	Brown clay, buff dolomite & tan chert 8[illegible].
10	20	Brown clay, buff dolomite & tan chert 20
20	30	Buff clay & dolomite, brown & tan chert 97-3, trace limonite.
30	40	Buff dolomite, gray & tan chert 95-5, limonite & marcasite 1¼
40	50	Buff dolomite, gray & tan chert 98-[illegible], limonite & marcasite 2
50	60	Buff dolomite, brown & tan chert 96-4, limonite & marcasite ½
60	70	Buff dolomite, brown & tan chert 90-[illegible], limonite & marcasite 2½
70	75	Buff dolomite, trace brown & gray [illegible] chert, trace limonite and marcasite.
75	80	Buff dolomite, gray dolomite 50-[illegible], few specks marcasite trace limonite. GRAY 75
80	85	Buff dolomite, gray dolomite 6[illegible]-[illegible], few specks marcasite, trace limonite
85	87½	Gray dolomite, buff dolomite 70-30, trace limonite, specks marcasite.
87½	90	Gray dolomite, gray dark specks dolomite, buff dolomite 40-40-20 [illegible]
90	92½	Gray dark specks dolomite, dark brown limonite, stud dolomite 40, limonite [illegible], trace marcasite.
92½	95	Gray dark specks dolomite, buff dolomite 1[illegible], trace limonite, few specks marcasite.
95	97½	Dirty brown limonite stained dolomite, few specks marcasite & limonite. (hard
97½	100	Brown & tan fossiliferous dolomite limestone, trace limonite & marcasite CIL 97½ (hard)
100	102½	Brown & tan fossiliferous dolomite limestone, specks limonite
102½	105	Brown & tan fossiliferous dolomite limestone, (hard)
105	107½	Brown & tan fossiliferous dolomite limestone, trace marcasite few specks marcasite. (hard)
107½	110	Brown & tan limestone, trace brown shale, trace limonite (hard)
110	112½	Green shale & gray clay, brown limestone [illegible]-4, trace limonite CLAY 111' (soft)
112½	115	Brown limestone, trace gray clay, trace soft brown shale, trace marcasite GLASS 112'
115	117½	No recovery
117½	120	Light brown fossiliferous limestone, trace brown shale, few specks marcasite (hard)
120	122½	Light brown fossiliferous limestone, trace dark brown shale, few specks marcasite (hard)
122½	125	Light brown fossiliferous limestone, some light gray brown brown limestone, specks marcasite (hard)
125	127½	Gray dolomite limestone, light brown fossiliferous 80-[illegible], few specks marcasite
127½	130	Gray & brown dolomite limestone, trace green shale & light brown clay, trace marcasite.

T.D.H. 131.8' w.s.t.
Water at 3[illegible]'
Land Description: Ne/SE-5 1E 1N
Location of Hole: 15[illegible]' E from DH # 16

Geologists: Harold [illegible] Davis
Edwin [illegible] Koenigmann

Drill Record
The [illegible] Fisher Company

Elevation

Property [illegible]: [illegible], Sect. [illegible] [illegible]
Term: [illegible] Finished: [illegible]
Drill Owner: Power Shoms
Drill Runner: Ray Neuvis

Depth From	To	Description
0	[illegible]	Brown soil
[illegible]	80	Brown Clay
80	85	Buff dolomite, brown & tan chert [illegible]
85	[illegible]	Buff dolomite, brown & tan chert [illegible]
[illegible]	[illegible]	Buff dolomite, brown & gray chert [illegible]
[illegible]	[illegible]	Buff dolomite, brown & gray chert [illegible]
[illegible]	[illegible]	Buff dolomite, brown & pale [illegible] chert [illegible]
[illegible]	70	Brown [illegible], buff dolomite, brown & tan chert [illegible] -Sc-1
70	[illegible]	Buff dolomite, buff clay, brown & tan chert [illegible], trace limonite
[illegible]	90	Buff dolomite, buff clay, brown & tan chert 7[illegible]
[illegible]	100	Buff dolomite, brown & tan chert 9 -1
100	110	Buff dolomite, brown & tan chert 8 -, trace dirty buff dolomite, trace limonite
110	120	Buff & dirty [illegible] dolomite, [illegible] brown [illegible] - buff clay 20, chert [illegible], trace limonite
120	125	Buff & dirty [illegible], [illegible] brown [illegible] - buff clay 1[illegible], chert [illegible], trace limonite
125	130	Dirty [illegible] dolomite [illegible], brown, [illegible], [illegible] buff clays 1[illegible], chert [illegible], [illegible] marl silt, one cut "[illegible]" dolomite, few cuts [illegible] - brown dolomite
130	135	Buff & brown dolomite & tan chert, some [illegible] - brown dolomite & gray [illegible] - scaled dolomite, some [illegible] brown & dark brown limestone, some dark [illegible] gray clay, [illegible] gray clay 1[illegible], trace "[illegible]" limestone, few specks limonite & marcasite [illegible] - 1[illegible] - 1[illegible]
135	137½	Buff & brown dolomite & chert, brown [illegible] & brown limestone, brown & gray clay, light brown clay [illegible], few specks marcasite, [illegible] limonite
137½	140	Brown [illegible] & brown shaly fossiliferous limestone, buff dolomite [illegible], brown & gray clay 1[illegible], some tan chert, brown shale, trace marcasite, trace limonite
140	142½	Gray - brown & light [illegible] limestone, trace brown dolomitic limestone, buff dolomite & clay [illegible], few specks marcasite McHaggon - 14[illegible] - 142½
142½	145	Light gray & gray - brown limestone, buff dolomite & clay 10, trace chert, few specks marcasite
145	147½	Light gray & gray - brown limestone & dolomitic limestone, buff dolomite & clay [illegible], trace chert, few specks marcasite & limonite
147½	150	Light gray & gray-brown limestone & dolomitic limestone, buff dolomite & clay 2, trace chert, trace marcasite & limonite

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Property Name: CALVERT ESTATE, Tract #3

From	To	
150	152½	Gray & light gray dolomitic limestone, buff dolomite & clay 15, trace marcasite & limonite
152½	155	Gray & light gray dolomitic limestone, buff dolomite & clay 5, trace marcasite & limonite

Total depth measured 156.0' with steel tape

Land Description: Northeast ¼ of the Southeast ¼ of Sec. 5, Twnsp 1 North, Rng 1 East

Location of Hole: 750' West & 250' South from Drill Hole #18

DRILLER'S NOTES:

60 - 85 Soft
85 -110 Mud seams
110 -125 Mud seams, soft
125 -135 Soft
135 -140 Firm
140 -155 Hard

Geologist: Harold S. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 20

Property Name: CALVERT ESTATE (Tract #3)
Began: 10-17-52 Finished: 10-20-52
Drill Owner: Swalley Estate
Drill Runner: D. Taylor

144
804 1/2

DEPTH From	To	DESCRIPTION
0	15	Brown soil
15	30	Dark brown clay
30	40	Dark buff clay & ochre clay
40	45	Dark buff clay, brown chert 95-5, trace yellow chert
45	50	Dark buff dolomite, buff clay, brown chert 85-10-5
50	55	Coarse cuttings: dark buff dolomite, gray-brown chert 90-10
55	60	Coarse cuttings; buff dolomite, brown chert 96-4
60	65	Coarse cuttings: buff dolomite, brown & tan chert 92-8
65	70	Coarse & extra coarse cuttings: buff dolomite, brown & tan chert 97-3
70	75	Coarse cuttings: buff dolomite, brown & tan chert 80-20
75	80	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 92-8
80	85	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 90-10
85	90	Coarse cuttings: buff limonite-speckled dolomite, gray-brown chert 88-12
90	95	Coarse cuttings: dark buff dolomite, gray-brown chert 94-6
95	100	Coarse cuttings: dark buff dolomite, gray-brown chert 97-3
100	105	Buff & dark buff dolomite, gray-brown chert 99-1, (some coarse cuttings)
105	110	Coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 80-20
110	115	Extra coarse cuttings: buff limonite-speckled dolomite, brown & tan chert 90-10
115	120	Coarse cuttings: buff limonite-speckled dolomite, tan & gray-brown chert 92-8
120	125	Extra coarse cuttings: buff limonite-speckled dolomite, gray-brown & tan chert 70-30
125	130	Coarse cuttings: buff limonite-speckled dolomite, gray-brown & tan chert 60-40, trace limonite GRAY - 125?
130	135	Coarse cuttings: dark buff dolomite, brown chert 99-1, gray-buff clay 5, limonite 5, specks marcasite
135	137½	Dark buff dolomite, limonite-stained clay 50-50, gray-brown chert 1, limonite 2, specks marcasite
137½	140	Buff dolomite, gray clay 80-20, gray-brown & tan chert 5, limonite 3, marcasite 2 BLUE - 137½?
140	142½	Gray clay, buff dolomite & gray-brown chert ravellings, limonite & marcasite 1
142½	145	Gray clay & brown clay, some buff dolomitic ravellings, marcasite & limonite 1½ OIL - 144?
145	147½	Brown clay, some buff dolomitic ravellings, marcasite 3
147½	150	Brown clay, trace brown dolomitic limestone, few specks phosphate, marcasite 1

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Property Name: CALVERT ESTATE (Tract #3)

From	To	
150	152½	Gray clay & brown-buff clay, trace brown dolomite, marcasite 1/10 CLAY - 149?
152½	155	Coarse cuttings: dark brown dolomite, marcasite 1 (some brown chert & buff dolomitic ravellings) GLASS - 151?
155	157½	Coarse cuttings: Mostly buff dolomite & gray-brown chert ravellings, trace brown dolomite, trace gray dolomitic limestone, trace gray clay, marcasite 1, trace limonite
157½	160	Mostly buff dolomite & gray-brown chert ravellings, little gray dolomitic limestone, marcasite 1, limonite 3 (ravelling) McGREGOR - 157½?

Total depth. Impossible to measure with steel tape due to caving condition of hole. Very difficult to pick the formation "Tops" with any degree of accuracy.
Water at 60 ft.

Land Description: Southeast ¼ of Northwest ¼, Twnsp 1 North, Rng 1 East

Location of Hole: South 45° East 500' from Drill Hole #14

Geologist: Harold W. Lavis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 21 (DM&A)

Property Name: CALWERT ESTATE(Tract #3)
Began: 1-24-53 Finished: 1-30-53
Drill Owner: Thomas & Reavis
Drill Runner: Ray Reavis

122.9
81 2½

DEPTH From	To	DESCRIPTION
0	10	Brown clay
10	15	Dark buff dolomite, brown chert 95-5, marcasite 1/10
15	20	Dark buff dolomite, brown & light brown chert 97-3, few specks limonite
20	30	Coarse cuttings: buff dolomite, light brown chert, dark buff chert 94-6, trace limonite
30	35	Coarse cuttings: buff dolomite, brown & dark buff chert 92-8, few specks limonite
35	40	Coarse cuttings: buff dolomite, dark brown & dark buff chert 88-12, trace limonite
40	50	Coarse cuttings: buff dolomite, dark brown & dark buff chert 85-15, trace limonite
50	65	Buff dolomite, brown & buff chert 90-10, trace limonite
65	80	Buff dolomite, brown & buff chert 94-6, trace limonite
80	90	Buff dolomite, brown & buff chert 93-7, trace limonite
90	95	Buff dolomite, brown & buff chert 88-12, marcasite 2/10 (Coarse cuttings) OHaX - 99
95	100	Buff dolomite, brown & buff chert 95-5, few coarse cuttings of gray marcasite-speckled dolomite, marcasite 4
100	102½	Ravellings of buff dolomite & chert, marcasite 1
102½	105	Ravellings of buff dolomite & chert, gray dolomite 1, marcasite 2
105	110	Ravellings of buff dolomite & chert, gray dolomite 5, marcasite 6
110	112½	Ravellings of buff dolomite & chert, trace gray dolomite, marcasite 4
112½	115	Ravellings of buff dolomite & chert, gray clay 20, marcasite 3 BLUE - 114½
115	117½	Ravellings of buff dolomite & chert, gray clay & gray marcasite-speckled dolomite 60-40, marcasite 5
117½	120	Gray marcasite-speckled dolomite, buff dolomite & chert ravellings 80-20, few fossils, marcasite 2
120	122½	Gray marcasite-speckled dolomite, buff dolomite 90-10, numerous fossils, marcasite 5
122½	125	Pale brown dolomitic limestone, gray marcasite-speckled chert & buff chert 50-50, marcasite 5 OILROCK - 122½
125	127½	Chert ravellings, gray clay & pale brown clay 50-50, few specks phosphate, few coarse cuttings gray marcasite-speckled dolomite
127½	130	Ravellings from overlying beds, brown dolomitic limestone, (Glass) 80-20, marcasite 1 GLASS - 127½
130	132½	Ravellings from overlying beds, brown dolomitic limestone (Glass) 70-30, marcasite 4
132½	135	Gray dolomitic limestone, brown dolomitic limestone & dark brown shale 90-10, some ravellings from overlying beds, marcasite 2

(Continued on next page)

Property Name: CALVERT ESTATE (Tract #3)

From	To	
135	138	Gray dolomitic limestone, little ravellings from overlying beds, marcasite 2

Total depth measured 138.2 with steel tape.
Water 37½'
Hole was very loose; almost impossible to recognize the beds. "Tops" are very unreliable.

Driller's Remarks:

0 - 10	Clay
10 - 45	Soft & cavy
45 - 55	Firm
55 - 95	Cavy
95 -102½	Soft
102½-105	Cavy
105-117	Soft
117 -129	Soft & cavy
129 -138	Soft

A loose, cavy hole.
Struck water at 30'
Strong flow water at 50'
Another flow not so strong at 85

Land Description: Southeast ¼ of Northwest ¼

Location of Hole: 200' South & 200' West from Northeast corner of Southeast ¼ of Northwest ¼

Geologist: Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: FRANCIS M. CALVERT
Began: 7-11-52 Finished: 7-12-52
Drill Owner: The Bill Swalley Estate
Drill Runner: Dave Taylor

Total Depth 245

Water Level 66.5'

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Coarse cuttings buff dolomite, trace limonite & marcasite
10	25	Buff dolomite, some brown-buff dolomite, trace marcasite & limonite
25	40	Buff dolomite, some brown-buff dolomite, few specks marcasite & limonite
40	55	Buff dolomite, few specks limonite
55	70	Buff dolomite, few specks limonite
70	85	Brown-buff dolomite, thin trace marcasite
85	100	Light brown dolomite, trace marcasite, trace galena
100	105	Light brown dolomite, trace marcasite, few specks galena
105	110	Light brown dolomite, gray & tan chert 97-3, trace marcasite, a speck galena DRAB - 105
110	120	Brown dolomite, brown & tan chert 99-1, trace marcasite, few specks galena
120	130	Brown dolomite, brown & tan chert 97-3, trace marcasite, few specks galena
130	140	Brown dolomite, gray & tan chert 96-4, trace marcasite, trace galena
140	150	Pale brown dolomite, gray chert 99-1, trace marcasite, a speck blende
150	160	Brown dolomite, gray & tan chert 97-3, calcite 3, trace marcasite
160	170	Brown dolomite, gray dolomite shale 6, marcasite 1/10
170	180	Pale brown dolomite, gray chert 97-3, trace marcasite
180	190	Light brown dolomite, brown & tan chert 97-3, trace marcasite
190	200	Light brown dolomite, brown & tan chert 98-2, trace marcasite
200	205	Gray-brown dolomite, trace marcasite GRAY - 200
205	210	Gray-brown dolomite, trace marcasite, trace blende
210	212½	Gray-brown dolomite, trace calcite, trace marcasite, trace blende
212½	215	Gray-brown dolomite, calcite ½, marcasite ½, blende 1
215	217½	Gray-brown dolomite, gray dark-speckled dolomite 80-20, marcasite 1, blende 1 BLUE - 217
217½	220	Gray dark-speckled dolomite, buff dolomite 10, marcasite 1, blende 1
220	222½	Brown & light brown limestone, gray dark-speckled dolomite & clay 80-20, marcasite 1, blende 1½ OIL - 220.5
222½	225	Brown & light brown limestone, marcasite 2/10, blende 1/10
225	227½	Brown & light brown limestone, trace marcasite, trace blende

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Tennessee Zinc & Pocklington

Hole No. 7

DRILL RECORD

The Eagle-Picher Mining & Smelting Co.

Property Name: Francis M. Calvert
Begun: 7-30-52 Finished: 8-[illegible]
Drill Owner: Swallow Estate
Drill Runner: Taylor

Total Depth 156'
Water level 8'

Collar elevation

From	To	
0	5	Soil & brown limestone stained clay
5	10	Buff dolomite & brown clay, limonite 5
10	15	Buff dolomite, limonite 1
15	25	Light brown dolomite, light brown chert 95-5, limonite 1 DRAB 15
25	35	Brown dolomite, brown & gray chert 97-3, marcasite ½, few specks Blende.
35	45	Brown dolomite, brown chert 97-3, marcasite ½, few specks Blende & Galena.
45	55	Brown dolomite, brown chert marcasite specks, 93-7, marcasite 4, speck Blende Galena.
55	65	Brown dolomite, tan chert 93-7, marcasite 2½
65	75	Brown dolomite, brown & tan chert 94-6, marcasite 2, speck Blende & Galena.
75	85	Brown dolomite, brown & tan chert 95-5, marcasite 2, trace Blende.
85	95	Brown dolomite, brown & tan chert 97-3, marcasite 3, few specks Blende & Galena.
95	105	Brown dolomite, brown & tan chert 98-2, marcasite 1½
105	110	Small recovery brown dolomite, gray chert 95-5, marcasite 1½
110	115	Brown dolomite, brown tan cher 94-6, marcasite 1
115	120	Light brown dolomite, gray dolomite 60-40, marcasite 1 GRAY 118'
120	125	Gray dolomite, marcasite 1, trace gray clay.
125	130	Light gray brown dolomite, marcasite 1
130	132½	Dark gray dolomite, gray dark specks dolomite 80-20, marcasite ½ BLUE 132'
132½	135	Gray chert & specks dolomite, marcasite ½
135 -	137½	Gray chert & specks dolomite, marcasite , brown dolomite limestone & brown shale 90-10, gray clay marcasite ½ OIL 137'
137½	140	Brown & tan dolomite limestone, marcasite ½
140	142½	Brown & tan dolomite limestone, light gray shale dolomite limestone, glauconite 5, marcasite ½ CLAY 142½
142½	145	Gray clay & white & black mottled dolomite limestone, brown dolomite limestone 20, marcasite ½
145	147½	Gray clay, light brown dolomite limestone 60-40, trace marcasite.
147½	150	Brown & light brown dolomite limestone, trace marcasite GLASS 147½
150	152½	Brown dolomite limestone, dark brown limey shale 10, gray shale 5 trace marcasite.
152½	155	Gray dolomite limestone, green shale 20, brown dolomite limestone 16, trace marcasite. M & G 155

T. D. M. 156' w.[illegible]

Water stands at 18'

No Assays

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 5

Property Name: FRANCIS M. CALVERT
Began: 7-21-52 Finished: 7-29-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor

Total Depth 248

Water Level 71.5

DEPTH From	To	DESCRIPTION
0	5	Soil & clay
5	10	Brown-buff clay
10	15	Coarse cuttings buff dolomite, trace limonite
15	30	Buff dolomite, speck limonite
30	45	Buff dolomite, specks limonite
45	60	Brown-buff & buff dolomite, few specks limonite, speck galena
60	75	Brown-buff dolomite, trace limonite, few specks galena
75	90	Brown-buff dolomite, few specks limonite, few specks galena
90	105	Brown-buff dolomite, trace limonite, specks galena
105	110	Pale brown dolomite, trace limonite, specks galena & marcasite
110	115	Pale brown dolomite, limonite 1/10, thin trace galena, thin trace marcasite
115	120	Brown dolomite, brown & tan chert 99-1, trace marcasite, limonite 1/10 DRAB - 118
120	125	Brown dolomite, gray & brown chert 99-1, marcasite ½
125	130	Brown dolomite, gray & brown chert 95-5, marcasite 1/10
130	140	Brown dolomite, gray chert 97-3, marcasite 3 (some marcasite-speckled dolomite & chert)
140	150	Brown dolomite, gray chert 95-5, marcasite 2 (some marcasite-speckled dolomite & chert)
150	160	Gray-brown dolomite, gray chert 97-3, marcasite 1½, (some marcasite-speckled dolomite)
160	170	Gray-brown dolomite, tan chert 98-2, marcasite 1½ (some marcasite-speckled dolomite)
170	180	Brown dolomite, tan chert 99-1, marcasite ½
180	190	Brown dolomite, trace tan chert, marcasite ½
190	200	Brown dolomite, gray chert 95-5, marcasite 1
200	205	Brown dolomite, gray & tan chert 97-3, marcasite 1
205	210	Brown dolomite, gray & tan chert 96-7, marcasite 1
210	215	Brown dolomite, trace chert, trace calcite, marcasite 1
215	220	Light gray-brown dolomite, marcasite ½ GRAY - 215 ?
220	222½	Brown dolomite (some marcasite-speckled) marcasite 1
222½	225	Brown dolomite (some marcasite-speckled) marcasite 1
225	227½	Brown dolomite, gray dark-speckled dolomite & clay 80-20, marcasite 1 BLUE - 227
227½	230	Gray dark-speckled dolomite, marcasite ½
230	232½	Brown & tan limestone, trace shale 3, thin trace marcasite OIL - 230
232½	235	Brown & tan limestone, trace shale 5, trace marcasite-speck galena
235	237½	Gray-brown & tan limestone, brown shale 10, thin trace marcasite & galena

(Continued on next page)

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 8

Property Name: F. M. CALVERT
Began: 8-25-52 Finished: 8-28-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor

Total Depth 175

Water Level 36

147.5
8/2

DEPTH From	To	DESCRIPTION
0	15	Soil & clay
15	20	Clay & some chert
20	25	Brown-buff dolomite, a speck chert, some brown clay DRAB 25
25	30	Brown-buff dolomite, tan & light gray chert 99-1, trace limonite
30	40	Brown-buff dolomite, red & tan chert 95-5, limonite 5
40	50	Brown-buff & gray dolomite, gray & red chert 96-4, limonite 4, marcasite 1
50	55	Gray & brown dolomite, tan & red chert 96-4, trace marcasite, limonite 2
55	60	Buff dolomite, gray & tan chert 97-3, marcasite 1½
60	70	Buff dolomite, gray & light tan chert 99-1, trace marcasite
70	80	Buff & gray dolomite, gray chert 99-1, trace limonite
80	90	Light brown & buff dolomite, trace gray chert, trace limonite
90	100	Brown-buff dolomite, trace gray chert, marcasite 1/10
100	110	Buff & gray dolomite, trace gray chert, trace marcasite
110	120	Brown-buff dolomite, gray chert 98-2
120	125	Gray & buff dolomite, trace marcasite
125	130	Gray dolomite, trace marcasite GRAY - 125
130	135	Gray dolomite, marcasite 2/10
135	137½	Gray & light brown dolomite, trace marcasite
137½	140	Brown & gray dolomite, gray dark-speckled dolomite 80-20, marcasite 1/10 BLUE - 139½
140	142½	Gray dark-speckled dolomite, trace gray clay, trace marcasite
142½	145	Gray dark-speckled dolomite, trace calcite, trace marcasite
145	147½	Gray dark-speckled dolomite, gray clay 3, gray shaly limestone 2, trace marcasite
147½	150	Gray & brown limy dolomite, trace brown shaly limestone, trace marcasite OIL - 147½
150	152½	Light brown dolomite limestone, brown limy shale 1, trace marcasite
152½	155	Brown & gray dolomitic limestone, brown limy shale 3, trace calcite, trace marcasite
155	157½	Light brown & gray dolomitic limestone, brown limy shale 5, marcasite 1/10, specks blende
157½	160	Light brown & gray limestone, trace gray clay, brown limy shale ½, trace marcasite
160	162½	Gray & light brown dolomitic limestone, gray & green-gray shale 98-2 GLASS - 160
162½	165	Light brown & gray dolomitic limestone, trace marcasite

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Geologist: Harold W. Davis
Edwin J. Poehlmann

HOLE NO. 8
Continued

Property Name: F. M. CALWART

From	To	
165	167½	Light brown & gray dolomitic limestone, trace green-gray shale, trace marcasite
167½	170	Light brown & gray lime tone, trace marcasite
170	172½	Gray dolomitic limestone, trace brown shale
		MSGREGOR - 170
172½	175	Gray & light gray dolomitic limestone, trace gray greasy shale

Total depth measured 175.3' with steel tape.
Water at 36'

Land Description: Northwest ¼ of Northeast ¼ of Sec. 8, Twnsp 1 North, Rng 1 East

Location of Hole: 400' South & 300' West from corner of lease

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 9 (DMSA)

Property Name: FRANCIS M. CARVERT
Began: 1-19-53 Finished: 1-28-53
Drill Owner: Smalley
Drill Runner: D. Taylor

Elevation 997.92

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Brown clay, few coarse cuttings buff dolomite
10	15	Coarse cuttings: Buff dolomite
15	20	Coarse cuttings: Buff dolomite, brown-buff clay 90-10
20	30	Coarse cuttings: Buff dolomite
30	40	Coarse cuttings: Buff dolomite, little brown-buff clay, trace limonite
40	50	Coarse cuttings: Buff dolomite, few specks limonite
50	60	Dark buff dolomite, trace limonite
60	65	Dark buff dolomite, limonite 4
65	70	Extra dark buff dolomite, limonite 20
70	75	Coarse cuttings: dark buff dolomite, limonite 3
75	80	Coarse cuttings: dark buff dolomite, limonite 2
80	90	Coarse cuttings: dark buff dolomite, limonite 10
90	100	Buff dolomite, limonite ½
100	105	Buff dolomite (slightly calcareous), trace limonite
105	110	Buff dolomite, gray-brown chert & dark brown-buff chert 95-5, limonite 1 DRAB - 107½
110	115	Buff dolomite, dark brown-buff chert 80-20, limonite ½
115	120	Coarse cuttings: Buff dolomite, dark brown-buff chert 60-40, specks galena
120	125	Coarse cuttings: Buff dolomite, dark brown-buff chert 65-35, specks galena
125	130	Dark buff dolomite, dark brown-buff chert 80-20, limonite 10 specks galena
130	135	Coarse cuttings: Dark buff dolomite, dark brown-buff chert & brown chert 75-25, limonite 3/10, few specks galena
135	145	Buff dolomite, brown & dark brown-buff chert 92-8, limonite 8/10, a speck galena

Snapped bit off in hole--could not fish it out.
Hole abandoned by driller

Land Description: Southwest ¼ of Southeast ¼

Location of Hole: 1100' North & 300' East from Southwest corner of Southeast ¼

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 10 (DMEA)

Property Name: FRANCIS M. CALVERT
Began: 1-27-53 Finished: 1-31-53
Drill Owner: Swalley
Drill Runner: D. Taylor

Elevation 997.92

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Brown clay
10	20	Coarse cuttings: Buff dolomite
20	25	Coarse cuttings: Buff dolomite, brown-buff clay 60-40
25	30	Coarse cuttings: Buff dolomite, brown-buff clay 70-30
30	40	Buff dolomite, trace limonite
40	50	Buff dolomite (some coarse cuttings), few specks limonite
50	60	Buff dolomite (some coarse cuttings), few specks limonite
60	75	Buff dolomite, (some coarse cuttings), few specks limonite
75	85	Buff dolomite, trace limonite, trace brown clay
85	90	Buff dolomite (slightly calcareous), trace limonite
90	100	Buff dolomite, limonite stained clay 95-5, limonite 2/10
100	105	Buff dolomite, brown, buff & gray clay 99-1, trace limonite
105	110	Buff dolomite, buff & brown chert 95-5, trace limonite stained clay DRAB - 107½
110	120	Buff dolomite, dark buff chert 85-15, trace limonite, trace galena
120	130	Buff dolomite, dark buff chert 70-30, trace limonite, thin trace galena
130	135	Coarse cuttings: Buff dolomite, dark buff chert 92-8, trace limonite
135	150	Buff dolomite, dark buff chert 88-12, trace gray chert, trace limonite, few specks galena
150	160	Buff dolomite, dark buff gray & gray-brown chert 80-20, marcasite & limonite 7/10, few specks galena
160	170	Buff dolomite, dark buff & gray chert 90-10, marcasite 1
170	180	Buff dolomite, dark buff & gray chert, brown dolomite (coarse cuttings) 85-12-3, marcasite 6/10
180	185	Coarse cuttings: Buff dolomite, brown dolomite, dark buff & gray chert 80-17-3, little buff clay & dark gray clay, marcasite 3/10
185	190	Coarse cuttings: Dark buffish-brown dolomite, buff dolomite & brown dolomite, dark buff chert 60-33-5-2, marcasite (coarse mass) 10
190	195	Extra coarse cuttings: Gray marcasite-speckled chert, buff dolomite 97-3, marcasite 15
195	200	Coarse cuttings: Buff dolomite, marcasite-speckled chert 50-50, marcasite 20
200	205	Coarse cuttings: Buff dolomite, marcasite-speckled chert 95-5, few cuttings brown dolomite & a couple coarse cuttings that might be "Gray", marcasite 5
205	210	Coarse cuttings: Buff dolomite, brown dolomite, marcasite-speckled chert & buff chert, few pieces gray marcasite-speckled coarse-grained dolomite, marcasite 4, a speck galena GRAY - 205 (?)

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
210	215	Coarse cuttings: Buff dolomite & brown dolomite & chert ravellings, gray dolomite & gray dark-speckled dolomite & gray clay, calcite 1, marcasite 2 BLUE - 212 (?)
215	220	Apparently 100% ravellings of buff dolomite & marcasite-speckled chert, marcasite 9 Set small casing.
220	222½	Ravellings of buff dolomite & marcasite-speckled chert, marcasite 6
222½	225	Ravellings of buff dolomite & marcasite-speckled chert, tan fossiliferous limestone, dark gray cave clay 75-20-5, marcasite 5 OIL - 222½
225	227½	Brown limestone, no ravellings of dolomite or chert, marcasite 4 (may be ravelling)
227½	230	Brown limestone, green clay 80-20, marcasite 2, few specks phosphate CLAY - 229½
230	232½	Brown dolomitic limestone, gray fossiliferous limestone & bentonite 60-40, marcasite 1 GLASS - 231
232½	235	Brown dolomitic limestone, marcasite 4 (probably ravelling) little marcasite-speckled chert ravellings
235	237½	Brown limestone, gray dolomitic limestone 80-20, marcasite 3 (probably ravelling) McGREGOR - 237

Total depth measured 237.5' with steel tape.
Water 87½
Extremely cavy hole down to Oilrock, firm from Oilrock to McGregor. "Tops" are hard to find--very undertain.
H.W.D.

Driller's remarks:
Open ground 90-100
Oxidized to 205
Set 227' of 4 7/8" casing

Land Description: Southwest ¼ of Southeast ¼

Location of Hole: 6' West from Drill Hole #9

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 11

Property Name: FRANCIS M. CALVERT
Began: 2-3-53 Finished: 2-10-53
Drill Owner: Swalley
Drill Runner: David Tayler

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Buff dolomite (coarse cuttings), few specks marcasite
10	20	Buff dolomite (coarse cuttings), few specks marcasite & limonite
20	30	Buff & dark buff dolomite, few specks limonite
30	45	Dark buff dolomite
45	60	Dark buff dolomite, limonite 1/10
60	75	Dark buff dolomite, trace limonite
75	80	Dark buff dolomite, brown dolomite 93-7
80	85	Brown dolomite, dark buff dolomite 80-20, marcasite 1/10
85	95	Brown calcareous dolomite, marcasite ½
95	100	Brown calcareous dolomite, buff dolomite 95-5, trace limonite-stained clay, marcasite 1, (fine cuttings)
100	105	Brown dolomite, marcasite 2, (rather coarse cuttings)
105	110	Brown dolomite (fine cuttings), chocolate brown shale, smoky white chert 92-5-3, marcasite 8/10 DRAB - 107½
110	115	Brown dolomite, gray chert 98-2, marcasite 3/10
115	125	Brown dolomite, gray & brown chert 90-10, marcasite ½
125	135	Brown dolomite, gray, brown & tan chert 82-18, marcasite 7/10, a speck galena
135	150	Brown-gray dolomite, light gray & white chert 89-11, trace chocolate brown shale, marcasite 4
150	160	Pale brown dolomite, gray & light brown chert 80-20, marcasite 2
160	170	Fine cuttings: light brown dolomite, white chert 95-5, marcasite 5
170	180	Brown dolomite, tan & gray chert 88-12, few specks gray shale, marcasite 2
180	190	Brown dolomite, tan & brown chert 92-8, marcasite 1, a speck galena
190	195	Brown dolomite, gray-brown & brown chert 90-10, marcasite 2
195	200	Coarse cuttings: Pale brown dolomite, gray-brown chert 70-30, marcasite 2
200	205	Coarse cuttings: coarse-grained light gray dolomite, gray-brown chert 90-10, marcasite 8
205	207½	Coarse cuttings: coarse-grained light gray dolomite, gray-brown chert 97-3, marcasite 6
207½	210	Coarse cuttings: coarse-grained light gray dolomite, marcasite 3
210	212½	Coarse grained brown-gray dolomite, marcasite 4
212½	215	Coarse grained brown-gray dolomite, (coarse cuttings), marcasite 7
215	217½	Coarse grained brown-gray dolomite (coarse cuttings), gray clay 95-5, marcasite 2
217½	220	Extra coarse cuttings: Brown-gray dolomite, gray chert 92-8 (evidently entire sample is ravellings), marcasite 3/10

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
220	222½	Coarse cuttings: Brown-gray dolomite & gray chert ravellings, tan fossiliferous limestone 95-5, marcasite 1 OILROCK - 220.0 ?
222½	225	Coarse cuttings: Brown-gray dolomite & gray chert ravellings, tan limestone 80-20, marcasite 4
225	227½	Coarse cuttings: Ravellings--tan limestone 80-20, marcasite 3 CLAY - 227½
227½	230	Coarse cuttings: Ravellings, pale green clay 75-25, marcasite 1 GLASS - 230
230	232½	Coarse cuttings: Ravellings; dark brown dolomite 50-50, marcasite ½, chocolate brown shale 1
232½	235	Coarse cuttings: Ravellings, gray dolomitic limestone 80-20, marcasite ½, a speck blende
235	238	Coarse cuttings: Ravellings, gray dolomitic limestone 90-10, marcasite ½, a speck blende McGREGOR - 232½

Total depth measured 238.0' with steel tape.
Water 67'

Land Description: Southwest ¼ of Southeast ¼

Location of Hole: 75' West from Drill Hole #4

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 12

Property Name: FRANCIS M. CALVERT
Began: 2-10-53 Finished: 2-14-53
Drill Owner: Swalley Estate
Drill Runner: David Taylor

Elevation 941.78

176
766

DEPTH From	To	DESCRIPTION
0	1	Soil
1	5	Coarse cuttings: dark buff dolomite
5	20	Coarse cuttings: dark buff dolomite, trace limonite
20	25	Brown-buff dolomite, trace limonite
25	35	Buffish-brown dolomite, few specks limonite & marcasite
35	40	Brown & buffish-brown dolomite, few specks marcasite
40	45	Brown-buff dolomite, marcasite 2/10
45	50	Buffish-brown dolomite (some marcasite-speckled), marcasite 2, specks blende
50	55	Brown dolomite (some marcasite-speckled), marcasite 2, a speck blende
55	60	Light brown dolomite, dark brown shale, brown chert 95-4-1, marcasite 5, trace blende DRAB - 58
60	65	Brown dolomite, marcasite-speckled chert 93-7, marcasite 2, blende 3/10
65	70	Brown dolomite, marcasite-speckled chert, & brown chert 70-30, marcasite 5, specks blende
70	75	Brown dolomite, gray & brown chert 88-12, marcasite 1, specks blende
75	80	Pale brown dolomite, light brown-gray chert 95-5, marcasite 2/10, blende 1/10
80	85	Brown dolomite, light gray marcasite-speckled chert 92-8, marcasite 4, blende ½
85	90	Pale brown dolomite, gray & white chert 82-18, dark brown shale 1, marcasite 5, blende 4/10
90	95	Brown-gray dolomite, gray & white chert 88-12, dark brown shale 2, marcasite 2, blende 3/10
95	100	Brown-gray dolomite, gray chert 96-4, trace dark brown shale, marcasite 1, few specks blende
100	105	Gray-brown dolomite, gray chert 94-6, marcasite 3/10
105	110	Gray-brown marcasite-speckled dolomite, marcasite ½
110	115	Brown dolomite, gray chert 97-3, marcasite 4, trace blende
115	120	Light brown dolomite, tan chert 99-1, marcasite 9, few specks blende
120	130	Light brown dolomite, tan chert 97-3, marcasite 2
130	140	Brown dolomite, tan & brown chert 94-6, marcasite 3
140	145	Brown dolomite, light brown & brown chert 92-8, marcasite 4/10
145	150	Brown dolomite, gray-brown & marcasite-speckled chert 65-35, marcasite 3/10
150	155	Brown dolomite, trace tan chert, marcasite 20
155	160	Brown-gray dolomite, marcasite 8 GRAY - 155
160	165	Gray dolomite, gray clay 99-1, marcasite 6
165	167½	Gray dolomite, marcasite 4

(Continued on next page)

Property name: FRANCIS M. CALVERT

From	To	
167½	170	Brown-gray dolomite, marcasite 6
170	172½	Brown-gray dolomite, gray clay 50-50, marcasite 1 BLUE - 171.2
172½	175	Gray dark-speckled dolomite & brown dolomite 80-20, marcasite 5
175	177½	Brown fossiliferous dolomitic limestone, gray clay, gray dark-speckled dolomite 60-20-20, marcasite 1 OIL - 176
177½	180	Brown marcasite-speckled dolomitic limestone, marcasite 18
180	182½	Brown fossiliferous dolomitic limestone, brown clay 95-5, brown shale 1, marcasite 7
182½	185	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 4, few specks blende, few specks phosphate CLAY - 184
185	187½	Coarse cuttings: Brown dolomitic limestone, green clay 90-10, marcasite 2 GLASS - 185.3
187½	190	Coarse cuttings: Gray dolomitic limestone, brown dolomitic limestone 95-5, marcasite 1 McGREGOR - 187.6

Total depth measured 190.5 with steel tape.
Water at 16½'

Assays

	ZnS	FeS_2	PbS	$ZnCO_3$
115 -120	0.20	6.40	nil.	nil.
150 -155	0.40	29.90	"	"
177½-180	0.35	28.40	"	"

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 480' East from Drill Hole #6

Geologists: Harold W. Davis
Edwin J. Poehlmann

Hole No. 5
Continued

Property Name: FRANCIS M. CALVERT

From	To	
237½	240	Gray shale & gray clay, brown limestone 5, thin trace marcasite CLAY - 237½
240	242½	Brown & tan limestone, dark brown dolomite limestone 30, trace marcasite GLASS - 240
242½	245	Gray marcasite-speckled dolomite limestone, brown dolomite limestone 80-20, marcasite 1 McGREGOR - 243
245	248	Gray dolomite limestone, trace green shale & calcite, trace marcasite

Total Depth measured 248.0' with steel tape.
Water at 71.5'

Land Description: Southwest quarter of Southeast quarter of Section 6, Township 1 North, Rng 1 East

Location of Hole: 430' N & 560' W from Southeast corner of Southwest quarter of Southeast quarter of Section 6

Wisconsin

Geologists: Davis
Poellmann

DRILL RECORD
The Eagle-Picher Company
Mining & Smelting Division

Property Name: FRANCIS M. CALVERT
Began: 7-25-52, finished 7-30-52
Drill Owner: Swalley Estate
Drill Runner: Taylor

Hole No. 6
Total Depth 183
Water 13'

Elev._____

From	To	
0	5	Soil
5	10	Buff dolomite & soil
10	25	Buff dolomite, few specks limonite
25	40	Buff dolomite, few specks limonite, specks marcasite
40	45	Light brown dolomite-few specks limonite
45	50	Light brown dolomite-specks tan chert, trace limonite DRAB 50
50	55	Brown dolomite-brown & gray chert 99-1, few specks marcasite, trace limonite
55	60	Brown dolomite-brown & gray chert 94-[illegible], marcasite 1/10
60	70	Brown dolomite-brown & gray chert 95-5, marcasite 1
70	80	Light brown dolomite-gray & tan chert 97-3, marcasite 1/2
80	90	Pale gray dolomite-gray & white chert 93-[illegible], marcasite 1/10
90	100	Light brown dolomite-tan chert 97-3, trace marcasite
100	110	Light brown dolomite-light gray & tan chert 96-4, trace marcasite
110	120	Light brown dolomite-light gray & tan chert 9[illegible]-1, marcasite 1
120	125	Brown dolomite-trace gray chert, gray, brown shale 3, marcasite 1/2
125	130	Small recovery, light brown dolomite-trace chert, marcasite 2½
130	135	Very small recovery: Coarse cuttings, brown dolomite-gray chert 96-4, marcasite 3
135	140	Small recovery: Brown dolomite-trace tan chert, marcasite ½
140	145	Brown dolomite-tan chert 95-5, trace marcasite
145	150	Pale brown dolomite-marcasite 2½
150	155	Gray dolomite-brown dolomite 90-90, marcasite 2 GRAY 151
155	157½	Gray dolomite-brown dolomite 10, marcasite 1½
157½	160	Gray, brown dolomite-marcasite 1
160	162½	Gray, brown dolomite-marcasite ½
162½	165	Gray dark speckled dolomite-gray, brown dolomite 10-40, gray clay 10, marcasite 1/2 BLUE 163½
165	167½	Dark gray, dark speckled dolomite, marcasite 1½
167½	170	Brown & tan fossiliferous limestone-gray shale 5, marcasite 8, blende 1/2 OIL 167¹
170	172½	Brown & tan fossiliferous limestone-brown clay 10, brown shale 5, marcasite 4, blende 1/2, few specks galena
172¹	175	Gray clay, green shale-brown & tan limestone 10, trace phosphate, marcasite 1½ CLAY 172½
175	177½	Brown & tan limestone-dark brown dolomitic limestone 15, trace gray clay, marcasite 1, few specks blende & galena GLASS 175
177½	180	Brown & tan limestone-brown shale 3, trace green shale, marcasite 1, few specks blende & galena McGREGORY 180
180	182½	Gray dolomitic limestone-marcasite 1
T.D.H.	183.0'	w.s.t. water at 13'.

Land Description: NW/SE Sec. 6, 1-N 1-E.

Location of Hole: 700' N & 520' W from DH #4.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 13

Property Name: FRANCIS M. CALVERT
Began: 2-16-53 Finished: 2-25-53
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Water Level 24'
Collar Elev. 949.59

DEPTH From	To	DESCRIPTION
0	10	Buffish brown clay
10	15	Coarse cuttings: Dark buff dolomite, residual chert 1
15	20	Coarse cuttings: Buff dolomite
20	30	Coarse cuttings: Buff dolomite, few specks limonite
30	40	Buff dolomite
40	45	Buff dolomite (trace calcareous dolomite)
45	50	Brown-buff dolomite (trace calcareous dolomite)
50	55	Brown-buff dolomite & buff dolomite, few specks marcasite
55	60	Buff dolomite, brown & gray-brown chert 94-6, trace chocolate brown shale, few specks marcasite DRAB - 57½
60	65	Dark buff dolomite, brown chert 93-7, few specks marcasite
65	70	Dark buff dolomite, brown dolomite, brown chert 70-20-10, specks marcasite
70	75	Fine cuttings: Dark buff dolomite, brown chert 99-1, brown clay 1, trace marcasite
75	80	Buff & brown-buff dolomite, brown chert & gray chert 85-15, trace brown clay & buff clay, marcasite 2/10
80	85	Buff dolomite, tan & brown chert 94-6, brown clay 1, trace marcasite
85	90	Buff dolomite, tan chert 91-9, brown clay 1, trace marcasite
90	95	Gray-brown dolomite, gray chert 88-12, brown clay 2, thin trace marcasite
95	100	Gray-brown dolomite, gray chert 92-8, trace brown clay, marcasite 1/10
100	105	Gray-brown dolomite, gray chert 98-2, dark gray & brown clay 4, trace marcasite
105	110	Gray-brown dolomite, gray chert 92-8, buff dolomitic ravellings 8, trace brown clay, trace marcasite
110	115	Gray-brown dolomite, gray chert 99-1, gray-brown clay ½, marcasite 8/10
115	120	Small recovery & coarse cuttings: Brown-buff dolomite, gray-brown & tan chert (coarse) 90-10, marcasite ½
120	125	Brown-buff dolomite, tan & gray chert 92-8, marcasite 3/10
125	130	Brown dolomite, tan chert 97-3, marcasite 2/10
130	135	Very small recovery: Coarse cuttings: Brown & buff dolomite, tan chert 99-1, gray & brown clay 2, trace marcasite
135	140	Brown dolomite, gray chert 99-1, trace brown clay, marcasite 4/10
140	145	Brown dolomite, tan chert 99-1, trace brown clay, marcasite 1½
145	150	Buffish-brown dolomite, brown & marcasite-speckled chert 80-20, marcasite 2
150	155	Very small recovery: Brown-buff dolomite, brown & gray chert 90-10, marcasite 4
155	160	Brown dolomite, tan & gray chert 99-1, marcasite 1

(Continued on next page)

Property Name: FRANCIS W. CALVERT

From	To	
160	165	Very small recovery: Black clay, brown dolomite 90-10, trace marcasite GRAY - 160 ?
165	170	No recovery
170	172½	Gray dolomite (some coarse cuttings), marcasite 2/10
172½	175	Very small recovery: Gray dolomite, considerable brown & buff dolomitic ravellings, marcasite 1
175	177½	Gray dolomite, marcasite 3/10
177½	180	Gray dolomite, marcasite 4 BLUE - 177½?
180	182½	Very coarse cuttings: Gray dolomite, trace gray clay, few specks appear to be "blue", marcasite ½
182½	185	Coarse cuttings: Gray dolomite, few cuttings gray dark-speckled dolomite, trace green shale, dark brown shale 1, marcasite 2 OIL - 184.7 ?
185	187½	
187½	190	Green clay, some coarse cutttings, gray dolomite ravellings, trace brown shale, few fossils, marcasite 2/10 CLAY - 187½
190	192½	Gray clay, dark brown dolomite 80-20, few fossils, marcasite 3/10 GLASS - 192
192½	195	Gray dolomitic ravellings, trace chocolate brown shale, marcasite 2
195	196½	Gray dolomitic ravellings, dark brown dolomite 75-25, marcasite 6 (Coarse cuttings)
196½	197½	Ravellings from all overlying beds. (Spent 3 hours trying to cut this last foot.) Hole stopped by geologist, marcasite 1 McGREGOR - not cut: estimated 198'

Very loose and fractured hole.
Total depth measured 196.5'

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 200' West & 10' North of Drill Hole #6

Geologist: Harold W. Davi

March 1953

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 14

Property Name: FRANCIS M. CARVENT
Began: 2-26-53 Finished: 3-5-53
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

DEPTH From	To	DESCRIPTION
0	15	Brown-buff clay
15	20	Buff dolomite, buff clay 75-25, limonite 8
20	30	Buff dolomite, brown clay 98-2, limonite 1
30	40	Coarse cuttings: buff dolomite, brown clay 99-1, trace limonite
40	50	Buff dolomite, few specks limonite
50	60	Buff dolomite, few specks limonite
60	70	Buff dolomite, few specks limonite
70	80	Buff dolomite
80	90	Buff dolomite
90	100	Dark buff dolomite
100	110	Dark buff dolomite, trace calcite
110	115	Buff & dark buff dolomite, dark buff & gray cave filling 5
115	120	Buff & dark buff dolomite
120	125	Buff & dark buff dolomite
125	130	Buff & dark buff dolomite
130	135	Buff dolomite, light brown chert 93-7 DRAB - 130
135	140	Coarse cuttings: Buff dolomite, brown chert 85-15
140	145	Coarse cuttings: Buff dolomite, brown & gray chert 90-10, a speck marcasite
145	150	Coarse cuttings: buff dolomite, brown chert 88-12
150	155	Coarse cuttings: Buff dolomite, brown chert 97-3
155	165	Coarse cuttings: Buff dolomite, brown & buff chert 91-9
165	175	Buff dolomite, brown & buff chert 92-8, trace gray clay
175	185	Dark buff dolomite, brown & tan chert 98-8
185	190	Buff & dark buff dolomite, tan chert 94-6, trace dark buff & gray clay
190	195	Dark buff dolomite, tan, brown & buff chert 96-4
195	200	Very small recovery: Buff dolomite, brown clay, brown chert 94-5-1
200	205	Gray-brown dolomite, dark buff dolomite, tan & brown chert 50-45-5, few specks marcasite
205	210	Buff dolomite, light brown-buff clay, dark gray clay 85-10-5, trace tan chert, few specks marcasite
210	215	Coarse cuttings: Buff dolomite & dark brown-buff cherty dolomite, trace tan chert, calcite 5
215	220	Brown-buff coarse-grained dolomite, tan chert 75-25, few specks marcasite
220	225	Coarse cuttings: Gray coarse-grained dolomite, tan & brown chert 60-40, few specks green shale, buff dolomitic ravellings 5, thin trace marcasite GRAY - 220
225	227½	Coarse cuttings: Gray coarse-grained dolomite, few specks green shale, trace marcasite, some buff dolomite & tan chert ravellings
227½	230	Coarse cuttings: Brown dolomite, tan & brown chert ravellings, buff dolomite ravellings 50-40-10, thin trace marcasite, a speck blende

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 14
Continued

Page 2

Property Name: FRANCIS M. CALVERT

From	To	
230	232½	Coarse cuttings: gray-brown dolomite, tan chert, buff dolomite 70-20-10, thin trace marcasite
232½	235	Extra coarse cuttings: Brown dolomite, tan & brown chert, buff dolomite 80-47-3, few specks marcasite
235	237½	Coarse cuttings: gray-brown dolomite, tan & brown chert, buff dolomite, gray clay 60-30-8-2, thin trace marcasite BLUE - 235
237½	240	Extra coarse cuttings: gray-brown dolomite, tan chert, gray clay, buff dolomite 75-10-10-5, trace marcasite
240	242½	Coarse cuttings: Brown dolomite, tan chert, buff dolomite 80-20-20, all ravelling, few specks marcasite OILROCK - 240
242½	245	Ravellings from overlying beds, trace fossils, few specks marcasite
245	247½	Ravellings from overlying beds, green clay 60-40, few fossils, trace marcasite CLAY - 245
247½	250	Coarse cuttings: Ravellings from overlying beds, dark brown dolomite 50-50, trace marcasite
250	252½	Ravellings from overlying beds, brown dolomite & limestone 95-5, thin trace marcasite GLASS - 247½
252½	254	Ravellings from overlying beds, gray dolomitic limestone, brown limestone 87-33-10, few specks marcasite McGREGOR - 253½

Total depth measured 254.3 with steel tape
Water at 60'

Very loose, cavy hole.
No assays

Land Description: Southwest ¼ of Southwest ¼ of Sec. 6, Twnsp 2 North, Rng 1 East

Location of Hole: South 15° West 250' from Drill Hole #10

Geologist: H. Farrey

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 15

Property Name: FRANCIS M. CALVERT
Began: 4-25-53 Finished: 4-28-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown Elevation 937.13

DEPTH From	To	DESCRIPTION
0	5	Brown clay & soil
5	10	Buff dolomite & brown clay
10	20	Buff dolomite, coarse cuttings
20	30	Buff & brown dolomite, specks limonite, few coarse cuttings
30	35	Buff & light brown dolomite, specks limonite, specks marcasite
35	40	Light brown & buff dolomite, trace marcasite
40	45	Light brown buff dolomite (50-50), gray chert 99-1, marcasite 1/10 DRAB - 42.5
45	50	Light brown dolomite, gray chert 97-3, brown shale 2, marcasite 3, blende 1/10, trace galena
50	55	Brown dolomite, gray chert 90-10, marcasite 3 5/10, blende 1/10, few specks galena
55	60	Brown dolomite, gray chert 93-7, marcasite 4 5/10, trace blende
60	70	Brown dolomite, gray chert 92-8, marcasite 3 5/10, trace blende
70	75	Brown dolomite, gray chert 97-3, marcasite 3, trace blende, trace galena
75	80	Brown dolomite, gray chert 90-10, marcasite 2, trace blende
80	90	Brown dolomite, gray chert 94-6, marcasite 5/10
90	100	Brown dolomite, gray chert 95-5, marcasite 5/10
100	110	Brown dolomite, gray & tan chert 95-5, marcasite 1
110	120	Brown dolomite, gray & tan chert 97-3, marcasite 1, specks blende
120	130	Brown dolomite, gray & tan chert 94-6, marcasite 3/10
130	135	Gray dolomite, brown dolomite (40-60), gray chert 99-1, marcasite 2/10 GRAY - 133
135	137½	Gray dolomite, trace gray-white clay, marcasite 1/10, specks blende
137½	140	Gray dolomite, marcasite 1/10
140	142½	Gray-brown dolomite, marcasite 2/10
142½	145	Gray dolomite, marcasite 1/10
145	147½	Dark gray speckled dolomite, gray dolomite (40-60), marcasite 1/10 BLUE - 146½
147½	150	Dark gray speckled dolomite, trace calcite, marcasite 1/10
150	152½	Dark gray speckled dolomite, marcasite 1/10
152½	155	Dark gray speckled dolomite, gray clay 1, marcasite trace
155	157½	Dark brown & tan dolomitic limestone, calcite 1/10, trace marcasite OIL - 155
157½	160	Dark brown & tan dolomitic limestone, calcite 1/10, trace marcasite, medium coarse cuttings
160	162½	Dark brown & tan dolomitic limestone, brown shale 1, trace calcite, marcasite 1/10, few specks galena
162½	165	Brown & tan dolomitic limestone, gray clay 1, marcasite 1/10 (some Blue ravellings)

(Continued on page 2)

Geologist: H. Harrey

HOLE NO. 15
Continued

Property Name: FRANCIS M. CALVART

From	To		
			CLAY - 165
165	167½	Gray-white clay, brown dolomitic limestone (20-80), trace marcasite	GLASS - 165½
167½	170	Tan dolomitic limestone, green shale 1, trace calcite, trace marcasite	
170	172½	Tan dolomitic limestone, dark brown shale 1, green shale 1, trace calcite, trace marcasite	
172½	176	Gray dolomitic limestone, tan dolomitic limestone (50-50), trace marcasite	McGREGOR - 174

Total depth measured 176.9

Land Description: Southwest ¼ of Northeast ¼

Location of Hole: North 75° West, 370' from Drill Hole #5 on C. Ralph

Wisconsin Field Est: Farrey

[illegible]

The Wisconsin Zinc Company

[illegible] Hole No. 16
Started: 4-2[illegible]-53, finished 4-3[illegible]-53 Total Depth 205
Drill Foreman: [illegible] Balsus[illegible]
Drill Runner: [illegible] Brown Elev. _____

From	To	
0	5	Black soil
5	10	Brown clay
10	15	Buff dolomite-trace limonite
15	20	Buff dolomite, trace limonite, medium coarse cuttings
20	30	Buff dolomite-brown clay 1-trace limonite
30	40	Buff dolomite
40	45	Pale buff dolomite-buff clay 20-trace limonite
45	55	Buff/pale buff dolomite-trace calcite-trace limonite-trace marcasite
55	65	Buff/brown dolomite-marcasite 1½
65	70	Buff/brown dolomite-brown dolomite-few specks gray chert, marcasite 1/10
70	75	Brown dolomite-gray chert (5-5, marcasite 4/10
75	80	Brown dolomite-gray chert (3-[illegible], marcasite 4
80	90	Brown dolomite-gray tan chert (4-7, marcasite 4
90	100	Brown dolomite-gray tan chert (7-2, calcite 1½, marcasite 2
100	110	Brown gray/brown dolomite-gray tan chert (4-6, gray/white clay 1, calcite 3/10, marcasite 7/10
110	120	Brown gray brown dolomite-gray-tan brown chert (1-[illegible], marcasite 3/10
120	130	Brown dolomite-gray brown chert (5-5, marcasite 2/10
130	140	Brown dolomite-gray brown chert (5-5, marcasite 3, trace blende
140	150	Gray-brown dolomite-gray tan chert (5-5, marcasite 4
150	160	Brown dolomite-gray tan chert (2-8, marcasite 4
160	165	Brown dolomite-gray chert (2-3, trace calcite, marcasite 10
165	170	Brown dolomite-brown dolomite (20-30) few specks brown chert, gray clay 3, marcasite 2
170	172½	Gray dolomite-trace calcite, marcasite 2
172½	175	Gray dolomite-marcasite 1
175	177½	Gray/brown dolomite-marcasite 5
177½	180	Dark gray speckled dolomite-gray dolomite (20-30)-gray/blue clay 7 marcasite 1
180	182½	Test cuttings
182½	185	Brown dolomitic limestone-dark gray speckled dolomite (20-30) gray/blue clay 15, marcasite 5, blende 1/10
185	187½	Brown dolomitic limestone-gray clay 3, marcasite 20, pyrite 25
187½	190	Brown dolomitic limestone-marcasite 25, blende 5%, some blue revelling
190	192½	Brown dolomitic limestone, marcasite 40, blende 5%
192½	195	Brown dolomitic limestone-gray clay (30-40) marcasite 50, blende 4%
195	197½	Brown dolomitic limestone-gray clay (40-60-) trace marcasite
197½	200	Brown dolomitic limestone-gray clay 15, marcasite [illegible], blende 1[illegible]

(Continued on next page)

Property name: [illegible] Hole No. 16
(Continued)

From To

[illegible] gray dolomitic limestone-gray clay 10, marcasite [illegible], blende 1[illegible]
Depth 200

[illegible] gray dolomitic limestone-marcasite 7, blende 5/10

T. D. [illegible]

Drilling Remarks: Ground was wet from 110-1[illegible], soft from 1[illegible]-200.
Lose [illegible] to [illegible]. [illegible] of the cuttings were lost
from 1[illegible]-115, 1[illegible]-1[illegible], 1[illegible]-1[illegible], [illegible]-1[illegible], [illegible]-1[illegible].

Land description: [illegible] 6, 1[illegible], 1
[illegible] from [illegible].

[illegible]

1[illegible]	1[illegible]	[illegible]	[illegible]	
1[illegible]	1[illegible]	cuttings lost		
1[illegible]	1[illegible]	0.[illegible]	1[illegible]	[illegible]
1[illegible]	1[illegible]	2.[illegible]	1[illegible]	"
1[illegible]	1[illegible]	[illegible]	[illegible]	"
1[illegible]	192[illegible]	4.[illegible]	[illegible]	"
192[illegible]	195	2.[illegible]	26.[illegible]	"
195	1[illegible]	0.95	1[illegible]	"
1[illegible]	200	1.1[illegible]	2[illegible]	"
200	200[illegible]	0.70	[illegible]	"

Assay received by telephone.

Geologist: H. Farrey

DRILL RECORD
The Ma le-Richter Company

HOLE NO. 17

Property Name: FRANCIS M. CALVERT
Began: 5-1-53 Finished: 5-5-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

DEPTH FROM	TO	DESCRIPTION
0	5	Brown clay & soil
5	10	Buff clay
10	15	Buff clay & buff dolomite
15	25	Buff dolomite, trace limonite, medium coarse cuttings
25	30	Buff dolomite
30	35	Buff-brown dolomite
35	45	Buff & gray-brown dolomite, few specks marcasite
45	55	Buff & brown dolomite, marcasite 1/10
55	60	Brown & buff dolomite, trace gray-white clay, marcasite 1/10
60	65	Brown dolomite, brown & buff dolomite (60-50), gray chert 99-1, marcasite 1/10 DRAB - 62½
65	70	Brown dolomite, gray & tan chert 96-4, marcasite 1
70	80	Brown dolomite, gray chert 92-8, marcasite 4
80	90	Brown dolomite, gray chert 91-9, marcasite 2
90	100	Gray-brown dolomite, tan chert 92-8, marcasite 3
100	110	Gray-brown dolomite, gray tan & brown chert 96-4, marcasite 1 5/10, specks blende
110	120	Light brown dolomite, gray & tan chert 99-1, marcasite 2 5/10, blende 1/10
120	130	Light brown dolomite, gray & tan chert 96-4, marcasite 2, blende 2/10
130	135	Light brown & brown dolomite, gray chert 99-1, calcite 1/10, marcasite 6, blende 2/10
135	140	Light brown & brown dolomite, gray & tan chert 98-2, marcasite 8, blende 5/10 (small recovery)
140	145	Light brown dolomite, gray chert 99-1, trace calcite, marcasite 15, blende 7 (small recovery)
145	147½	Brown dolomite, gray & tan chert 96-4, trace calcite, marcasite 12, blende 4
147½	150	Brown dolomite, gray chert 94-6, marcasite 8, blende 1 5/10
150	155	Brown dolomite, gray chert 93-7, marcasite 8, blende 1
155	160	Brown dolomite, gray chert 95-5, marcasite 12, blende 1 5/10
160	162½	Gray dolomite, brown dolomite (90-10), trace calcite, marcasite 11, blende 1 5/10 GRAY - 160.3
162½	165	Gray dolomite, marcasite 5, blende 1
165	167½	Gray dolomite, trace calcite, marcasite 3, blende 5/10
167½	170	Gray-brown dolomite, marcasite 3, blende 5/10
170	172½	Gray-brown dolomite, marcasite 1 5/10, blende 2/10
172½	175	Gray-brown dolomite, marcasite 1, blende 2/10
175	177½	Dark gray-speckled dolomite, gray dolomite (10-90), marcasite 5, blende 1 BLUE - 177.3
177½	180	Dark gray speckled dolomite, gray-blue clay 5, marcasite 7, blende 2
180	182½	Dark gray speckled dolomite, trace gray-blue clay, marcasite 10, blende 6
182½	185	Dark gray speckled dolomite, marcasite 10, blende 5

(Continued on next page)

Geologist: H. Farrey

HOLE NO. 17
Continued

Page 2

Property Name: FRANCIS M. CALVERT

From	To	
185	187½	Dark gray speckled dolomite, marcasite 12, blende 2
187½	190	Dark brown dolomite limestone, tan limestone (fossiliferous) dark gray dolomitic limestone (80-20), marcasite 7, blende 7/10, specks galena OIL - 188
190	192½	Dark brown dolomitic limestone, tan limestone (fossiliferous), dark brown shale 15, marcasite 5, blende 7/10, specks galena, coarse cuttings
192½	195	Dark brown dolomitic limestone, gray clay, gray dolomitic limestone (40-40-20), brown shale 5, marcasite 4, blende 2/10, specks galena CLAY - 192½ GLASS - 193½ McGREGOR - 194½
195	197½	Gray dolomitic limestone (glassy & oil ravellings), marcasite 2, blende 3/10, specks galena

Total depth measured 197.7
Driller's remarks: Soft ground 135-140, 160-190. Lost most of cuttings from 140-185. Strong water 135-140. Clay bed from 1942½ - 194.

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 100' east from Drill Hole #16

Assays	ZnS	FeS₂	PbS
135 - 140	0.75	5.80	nil.
140 - 145	19.25	18.70	"
145 - 147½	5.50	18.30	"
147½ - 150	1.90	16.60	"
150 - 155	2.25	14.00	"
155 - 160	3.00	16.80	"
160 - 162½	1.35	11.40	"
162½ - 165	0.80	5.40	"
165 - 167½	0.55	4.70	"
172 - 175	0.75	4.60	"
175 - 177½	2.70	11.20	"
177½ - 180	1.70	21.70	"
180 - 182½	10.35	24.30	"
182½ - 185	11.55	34.50	"
185 - 187½	3.30	16.10	"
187½ - 190	1.45	16.60	"
190 - 192½	1.45	9.70	"
192½ - 195	1.85	14.20	"
195 - 197½	0.85	10.10	"

Geologist: H. Farrey

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 18

Property Name: FRANCIS M. CALVERT
Began: 5-6-53 Finished: 5-6-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown Elevation 933.07

767

DEPTH From	To	DESCRIPTION
0	5	Brown clay & black soil
5	10	Buff dolomite, trace buff-white clay, limonite 5/10, coarse cuttings
10	20	Buff dolomite, trace buff-white clay, limonite 2/10, coarse cuttings
20	25	Buff dolomite, limonite 1/10, coarse cuttings
25	30	Buff dolomite, & brown dolomite, brown clay 10, limonite 7/10, marcasite 1/10
30	35	Buff & brown dolomite, limonite 5/10, marcasite 5/10
35	40	Brown & buff dolomite, limonite 2/10, marcasite 3
40	45	Brown & buff dolomite, few specks gray chert, limonite 1/10, marcasite 4 DRAB - 45
45	50	Brown dolomite, gray chert 99-1, limonite 1/10, marcasite 3
50	55	Light brown dolomite, gray chert 96-4, limonite 1/10, marcasite 2/10
55	60	Light brown dolomite, gray chert 98-2, limonite 1/10, marcasite 1 5/10
60	70	Brown dolomite, brown-buff shale 5, gray chert 95-5, limonite 1/10, marcasite 5/10
70	80	Brown & gray-brown dolomite, gray chert 95-5, marcasite 2/10
80	90	Gray-brown dolomite, gray chert 96-4, marcasite 1 5/10
90	100	Gray-brown & brown dolomite, gray chert 99-1, marcasite 1 5/10
100	110	Gray-brown dolomite, gray chert 98-2, marcasite 1
110	120	Gray-brown & brown dolomite, gray chert 96-4, marcasite 7/10
120	130	Brown dolomite, gray chert 93-7, marcasite 5/10
130	140	Brown dolomite, gray chert 98-2, marcasite 3/10
140	145	Gray dolomite, brown dolomite (20-80), specks gray chert, trace gray clay, marcasite 1/10 GRAY - 144
145	147½	Lost cuttings
147½	150	Gray dolomite, marcasite 4 (small recovery)
150	152½	Gray dolomite, marcasite 3/10
152½	155	Gray dolomite, marcasite 5 (small recovery)
155	157½	Gray dolomite, marcasite 3 (½ recovery)
157½	160	Dark gray speckled dolomite, gray dolomite (80-20), gray clay 15, marcasite 4, trace blende BLUE - 158
160	162½	Dark gray speckled dolomite, gray clay 2, marcasite 1
162½	165	Dark gray speckled dolomite, marcasite 1
165	167½	Brown dolomitic limestone, dark gray speckled dolomite 60-40, gray-white clay 3, marcasite 1 5/10, blende 1/10 OIL - 166
167½	170	Tan limestone, brown dolomitic limestone, gray-white clay 8, marcasite 1, trace blende (some blue ravellings)

(Continued on next page)

Geologist: H. Farrey

Hole No. 18
Continued

Property Name: FRANCIS M. CALVERT

From	To		
170	172½	Tan limestone, dark brown shale 5, blue clay 5, trace calcite, marcasite 1	CLAY - 172.5
172½	175	Dark brown dolomitic limestone, blue clay 20-80, marcasite 1/10	GLASS - 174½
175	177½	Dark brown dolomite, marcasite 2/10	
177½	180	Gray dolomitic limestone, marcasite 1/10	McGREGOR - 177½

Total depth measured 180.7

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 150' East from Drill Hole #6

Geologist: H. Farrey

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 19

Property Name: FRANCIS M. CALVERT
Began: 5-9-53 Finished: 5-12-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

DEPTH From	To	DESCRIPTION
0	7	Black soil
7	10	Buff clay
10	15	Buff dolomite, trace marcasite, coarse cuttings
15	20	Buff dolomite, trace limonite, trace marcasite, coarse cuttings
20	25	Buff & pale buff dolomite, trace limonite, trace galena, medium coarse cuttings
25	30	Buff & pale buff dolomite, trace limonite, trace marcasite, trace galena, medium coarse cuttings
30	35	Pale buff & buff dolomite, trace marcasite, trace galena
35	40	Pale buff dolomite, limonite 1/10, galena 1/10
40	45	Pale buff dolomite, trace calcite, limonite 1/10, galena 1/10
45	50	Pale buff & brown dolomite, limonite 1/10, trace galena
50	55	Brown dolomite, gray & tan chert 97-3, limonite 1/10, marcasite 1/10, galena 1/10 DRAB - 50
55	60	Brown dolomite, gray & tan chert 96-4, trace limonite, marcasite 1, few specks galena
60	70	Brown dolomite, gray & tan chert 94-6, marcasite 1, few specks galena
70	80	Brown dolomite, gray & tan chert 93-7, marcasite 5/10, few specks galena
80	90	Pale brown dolomite, tan & gray chert 97-3, marcasite 5/10
90	100	Pale brown dolomite, gray chert 98-2, trace calcite, marcasite 8/10
100	110	Brown dolomite, gray & tan chert 97-3, marcasite 2/10
110	120	Brown dolomite, gray & tan chert 95-5, marcasite 2/10 115 - 120 Small recovery
120	125	Gray-brown dolomite, gray chert 98-2, marcasite 4/10, specks blende, small recovery
125	135	Light brown & brown dolomite, gray & tan chert 95-5, marcasite 3/10, specks blende
135	145	Brown dolomite, gray & tan chert 95-5, marcasite 1/10
145	150	Brown dolomite, gray chert 99-1, marcasite 1
150	152½	Gray dolomite, brown dolomite (80-20), trace calcite, marcasite 2/10 GRAY - 150½
152½	155	Gray dolomite, trace brown clay, marcasite 2/10
155	157½	Gray dolomite, trace calcite, marcasite 6/10 (small recovery)
157½	160	Gray dolomite, marcasite 1 5/10 (small recovery)
160	162½	Gray dolomite, marcasite 1/ 5/10 BLUE - 163½
162½	165	Dark gray speckled dolomite, gray dolomite 60-40, trace gray clay, marcasite 1, few specks blende
165	167½	Dark gray speckled dolomite, trace calcite, marcasite 2/10, few specks blende
167½	170	Brown & tan limestone (fossiliferous), dark gray speckled dolomite (20-80), gray clay 10, marcasite 3/10, few specks blende OIL - 169½
170	172½	Brown & tan fossiliferous limestone, marcasite 1/10, few specks blende

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
172½	175	Brown & tan fossiliferous limestone, marcasite 4/10, trace blende
175	177½	Brown & tan fossiliferous limestone, marcasite 2/10, few specks blende CLAY - 177½
177½	180	Gray-blue clay, dark brown dolomitic limestone (80-20), marcasite 1/10 GLASS - 179
180	182½	Dark brown dolomitic limestone, gray-blue clay 30 (ravellings), trace marcasite
182½	185	Gray dolomitic limestone, dark brown dolomitic limestone (40-60), gray clay 15, trace marcasite McGREGOR - 184

Total depth measured 185.2

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: North 45° East 175' from Drill Hole #18

Geologist: H. Farrey

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 20

Property Name: FRANCIS H. CALWERT
Began: 5-12-53 Finished: 5-13-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

Elevation 985.38

DEPTH From	To	DESCRIPTION
0	8	Buff clay
8	15	Buff dolomite, buff clay 5 (ravelling), trace limonite, specks marcasite, coarse cuttings
15	25	Buff dolomite, trace limonite, coarse cuttings
25	35	Buff-brown dolomite, trace limonite, some coarse cuttings
35	40	Buff-brown dolomite, trace limonite, some coarse cuttings
40	45	Buff-brown & brown dolomite, specks marcasite, medium coarse cuttings
45	50	Buff-brown, brown & gray dolomite, specks marcasite, specks limonite
50	55	Buff-brown, brown & gray dolomite, trace marcasite
55	60	Buff-brown & brown dolomite, trace marcasite
60	65	Brown dolomite, marcasite 3/10
65	70	Brown dolomite, gray & brown chert 97-3, dark brown shale 2 marcasite 2/10 DRAB - 65
70	75	Brown dolomite, gray & brown chert 93-7, marcasite 7/10, specks blende
75	85	Brown dolomite, gray & brown chert 91-9, marcasite 3, specks blende, specks galena
85	95	Brown dolomite, gray & brown chert 90-10, marcasite 3, blende 1/10, trace galena
95	100	Brown dolomite, gray dolomite, gray clay 1, marcasite 3, blende 3/10
100	105	Gray-brown dolomite, gray & tan chert 96-4, marcasite 3, blende 3/10, specks galena
105	110	Brown dolomite, gray & tan chert 98-2, marcasite 3, blende 1/10
110	115	Brown dolomite, gray chert 96-4, marcasite 6, blende 2/10
115	120	Brown dolomite, gray chert 97-3, marcasite 8, blende 2/10 (small recovery)
120	125	Brown dolomite, tan & gray chert 95-5, marcasite 5/10, blende 1/10
125	130	Brown dolomite, tan & gray chert 98-2, marcasite 5/10, blende 1/10
130	135	Brown dolomite, tan & gray chert 97-3, marcasite 6, blende 1/10
135	140	Brown dolomite, tan & gray chert 97-3, marcasite 1, blende 1/10
140	145	Brown dolomite, tan & gray chert 96-4, marcasite 5, blende 1
145	150	Brown dolomite, tan & gray chert 95-5, marcasite 6, blende 1 5/10
150	155	Brown dolomite, tan & gray chert 97-3, marcasite 9, blende 3/ 5/10 (Small recovery)
155	157½	Brown dolomite, tan & gray chert 96-4, marcasite 9, blende 3 (small recovery)
157½	160	Brown dolomite, gray & tan chert 94-6, marcasite 12, blende 3
160	162	Brown dolomite, gray chert 98-2, marcasite 8, blende 3/10

(Continued on next page)

Property Name: FRANCIS M. GILBERT

From	To	
162½	165	Brown dolomite, gray & brown chert 99-1, marcasite 7, blende 1
165	167½	Gray-brown dolomite, gray & tan chert 99-1, marcasite 6, blende 5/10
167½	170	Gray dolomite, gray-brown dolomite, (40-60), marcasite 2, blende 1/10 GRAY - 169
170	172½	Gray dolomite, gray-white clay 1, marcasite 3, blende 2/10
172½	175	Gray dolomite, gray clay 10, marcasite 3, trace blende
175	177½	Gray dolomite, trace gray clay, marcasite 3, blende 1/10 some gray chert (ravelling)
177½	180	Gray dolomite, trace gray clay, marcasite 3, blende 1/10 (some gray chert ravelling)
180	182½	Gray dolomite, trace gray clay, marcasite 6, blende 2/10
182½	185	Dark gray speckled dolomite, gray dolomite (80-20), gray clay 5, marcasite 3, blende 1/10 BLUE - 183
185	187½	Dark gray speckled dolomite, gray-blue clay 40, marcasite 1, trace blende
187½	190	Brown dolomite limestone, dark gray speckled dolomite (40-60) gray-blue clay 5, marcasite 1, specks blende, specks galena OIL - 188½
190	192½	Brown dolomitic limestone, tan limestone, gray-blue clay 10, marcasite 1, blende 1/10 GRAY - 192.5
192½	195	Dark brown dolomitic limestone, gray-blue clay (20-80), trace marcasite, trace blende OLIVE - 194½
195	197½	Gray dolomitic limestone, dark brown dolomitic limestone (40-60), dark brown shale 5, marcasite 1/10, trace blende McGREGOR - 196½
197½	200	Gray dolomitic limestone, dark brown shale (ravelling), marcasite 1/10

Total depth 201.0

Driller's remarks: Fracture at 119. Fracture zone 130-140 lost most of cuttings, fracture zone 145-150 lost most of cuttings. Lost most of cuttings 140-145, 150-165. Soft ground from 182½-195.

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 150' North from Drill Hole #16

(Assays on next page)

Geologist: H. Farrey

HOLE NO. 20
Continued

Page 2

Property Name: FRANCIS M. CALVERT

Assays	ZnS	FeS2	PbS
125 - 130	0.60	2.40	nil.
130 - 135	1.10	6.70	"
135 - 140	0.85	3.90	"
140 - 145	3.20	7.30	"
145 - 150	1.30	8.20	"
150 - 155	3.85	15.30	"
155 - 157½	4.75	11.80	"
157½ - 160	3.80	14.40	"
160 - 162½	1.15	8.00	"
162½ - 165	1.95	7.50	"
165 - 167½	0.85	3.90	"
167½ - 170	0.55	3.70	"
170 - 172½	0.90	9.70	"
172½ - 175	0.55	6.40	"
175 - 177½	0.50	5.00	"
177½ - 180	0.50	5.40	"
180 - 182½	0.70	4.10	"
182½ - 185	0.85	8.00	"

Geologist: Harold M. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 21

Property Name: FRANCIS M. CALVERT
Began: 5-15-53 Finished: 5-19-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

Collar Elev. 949.53

DEPTH From	To	DESCRIPTION
0	10	Buff clay
10	15	Buff dolomite, brown-red clay 95-5, few specks red & buff residual chert
15	25	Coarse cuttings: Dark buff dolomite, limonite 2/10
25	35	Rather coarse cuttings: Dark buff dolomite, limonite 2/10 few specks marcasite
35	40	Rather coarse cuttings: Buff & brown-buff dolomite, limonite 1/10, few specks marcasite
40	50	Pale buffish-brown dolomite, marcasite 1/10
50	55	Pale brown dolomite, marcasite 3/10, few specks calcite
55	60	Pale brown dolomite, marcasite 3/10, few specks calcite
60	65	Brown dolomite, marcasite-speckled chert 85-15, marcasite 2, trace blende & galena DRAB - 60
65	70	Brown dolomite, marcasite-speckled chert 88-12, trace dark brown shale, marcasite 5, blende 2/10, trace galena
70	75	Brown dolomite, marcasite-speckled chert & brown chert 92-8 marcasite 6, blende 5/10, trace galena
75	80	Brown dolomite, marcasite -speckled chert 90-10, chocolate brown shale, marcasite 2, blende 2/10, trace galena
80	85	Brown dolomite, gray-brown chert 92-8, trace chocolate brown shale, marcasite 4, blende 3/10, trace galena
85	90	Brown dolomite, gray-brown chert 95-5, trace chocolate brown shale, marcasite 3, blende 2/10, trace galena
90	95	Pale brown dolomite, gray-brown chert 99-1, marcasite 1, blende 1/10, trace galena
95	105	Pale brown dolomite, light gray chert 93-7, marcasite 3, blende 4/10, trace galena
105	110	Brown dolomite, gray chert 93-7, trace brown chert, marcasite 4, blende ½, thin trace galena
110	115	Pale brown dolomite, gray chert 99-1, marcasite 6, blende 1
115	120	Brown dolomite, gray chert 92-8, marcasite 5, blende 2
120	125	Brown dolomite, gray chert 99-1, marcasite 12, blende 5
125	130	Brown dolomite, gray-brown chert 98-2, marcasite 5, blende 1
130	135	Brown dolomite, gray-brown chert 96-4, marcasite 4, blende 6/10
135	140	Brown dolomite, trace gray chert, marcasite 4, blende ½
140	145	Small recovery: Brown dolomite, brown, tan & marcasite-speckled chert 90-10, marcasite 2, blende 1
145	147½	Brown dolomite, brown & marcasite-speckled chert 88-12, marcasite 1, blende ½
147½	150	Brown dolomite, light brown chert 85-15, marcasite 7/10, blende 6/10
150	155	Brown dolomite, brown chert 96-4, marcasite ½, blende 1/10
155	160	Dark brown dolomite, few specks chert, marcasite ½, trace blende GRAY - 160

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
160	165	Gray dolomite, few specks brown dolomite, trace gray clay, marcasite 5, blende 2
165	167½	Gray dolomite, marcasite 1, blende 4/10
167½	170	Brown-gray dolomite, marcasite 1, blende 1/10
170	172½	Brown-gray dolomite, marcasite 7/10, blende 2/10
172½	175	Brown-gray dolomite, gray dark-speckled dolomite 90-10, marcasite 2, blende 8/10 BLUE - 174.8
175	177½	Gray dark-speckled dolomite, trace reddish-brown clay, blende 18, marcasite 8
177½	180	Gray dark-speckled dolomite, blende 30, marcasite 20
180	182½	Gray dark-speckled dolomite, blende 30, marcasite 25
182½	185	Gray dark-speckled dolomite, brown dolomitic limestone 95-5, few fossils, gray clay 1, marcasite 30, blende 15
185	187½	Brown dolomitic limestone, numerous fossils, marcasite 35, blende 10 OILROCK - 184.9
187½	190	Green clay, few fossils, marcasite 16, blende 8
190	192½	Gray clay (bentonite), brown dolomitic limestone 60-40, marcasite 6, blende 4 CLAYSHD - 188
192½	195	Few specks gray dolomitic limestone, marcasite ravellings from "Blue" horizon, 60, Blende ravellings from "Blue" 35, few specks chocolate brown shale GLASS - 191.5
195	197	Gray dolomitic limestone, some ravellings from "Glassrock" horizon, marcasite ravellings 15, blende ravellings 12, caving badly at the bottom MaGROOK - 195

Total depth measured - couldn't get tape to the bottom.
I am satisfied it measured 197'. H. W. Davis
Water 25'
Driller's remarks:

Lost most of cuttings	100 - 110
" " " "	125 - 135
" " " "	145 - 165
Soft ground	172½-192½
Caving in	192½- 197

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 100' East from Drill Hole #20

Assays	ZnS	FeS	PbS
110-115	0.35	6.70	nil.
115-120	0.85	11.40	"
120-125	4.85	17.20	"
125-130	1.05	12.70	"
140-145	3.90	10.30	"
160-165	1.90	12.00	"
172½-175	1.35	28.40	"
175-177½	28.65	21.50	"
177½-180	3[illegible].35	57.20	"
180-182½	21.40	43.40	"
182½-185	12.55	55.90	"
185-187½	10.15	34.80	"
187½-190	10.90	44.10	"
190-192½	3.10	11.80	"
192½-195	31.30	46.80	"
195-197½	17.55	80.90	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 22

Property Name: FRANCIS M. CALVERT
Began: 5-20-53 Finished: 5-22-53
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

Collar Elev. 940.73

768

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Brown clay
10	15	Buff dolomite, trace clay (rather coarse cuttings)
15	20	Buff dolomite, trace clay (rather coarse cuttings)
20	30	Brown-buff dolomite, trace clay, few specks marcasite, a specks blende (coarse cuttings)
30	40	Buffish-brown dolomite, buff dolomite 80-20, few specks marcasite, a speck blende
40	45	Brown dolomite, buff dolomite 80-20, a speck marcasite
45	50	Brown dolomite, trace marcasite
50	55	Brown dolomite, trace calcite, marcasite 2
55	60	Brown dolomite, tan & gray-brown chert 94-6, some clay sloughing, marcasite 3/10 DRAB - 87½
60	70	Brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 2, blende 2/10
70	75	Brown dolomite, dark gray marcasite-speckled chert 92-8, marcasite 2, blende 2/10
75	80	Brown dolomite, gray chert 97-3, marcasite 2, blende 3/10
80	85	Brown dolomite, gray chert 95-5, buff dolomitic ravellings 5, marcasite 1, blende 1/10
85	90	Brown-gray dolomite, gray & white chert 93-7, marcasite 1½, blende 6/10, trace galena
90	95	Gray dolomite, gray chert 96-4, marcasite 2, blende 3/10, trace galena
95	100	Brown-gray dolomite, gray chert 98-2, marcasite 8, blende 3, a speck galena
100	105	Brown-gray dolomite, gray chert 75-25, marcasite 10, blende 2, a speck galena
105	110	Gray dolomite, gray chert 99-1, chocolate brown shale 1, marcasite 7, blende 1
110	115	Brown dolomite, light tan chert 95-5, marcasite 5, blende ½
115	120	Brown dolomite, light tan che t 93-7, marcasite 4, blende ½
120	125	Brown dolomite, gray chert 80-20, marcasite 4, blende 4/10, few specks galena
125	130	Brown dolomite, gray chert 99-1, marcasite 3, blende 4/10, thin trace galena
130	135	Brown dolomite, gray chert 91-9, marcasite 5, trace blende, specks galena
135	140	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 10, few specks blende
140	145	Brown dolomite, marcasite-speckled chert 60-40, marcasite 25 blende 1
145	150	Brown dolomite, marcasite-speckled chert & gray chert 97-3, marcasite 4, blende 2/10 GRAY - 151
150	155	Gray dolomite, brown dolomite 80-20, marcasite 8, blende 6
155	157½	Gray dolomite, marcasite 12, blende 2
157½	160	Gray dolomite, marcasite 3, blende ½

(Continued on next page)

Geologist: Harold W. Davis

HOLE NO. 24
Continued

Property Name: FRANCIS M. CALVERT

From	To	
160	162½	Brown-gray dolomite, marcasite 6, blende ½
162½	165	Brown-gray dolomite, marcasite 2, blende 2/10
165	167½	Brown-gray dolomite, gray dark-speckled dolomite & gray clay 80-20, marcasite 2, blende 2 BLUE - 167
167½	170	Gray dark-speckled dolomite, marcasite 2, blende 1
170	172½	Gray dark-speckled dolomite, gray clay 2, marcasite 2, blende 7/10
172½	175	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 3, blende 6/10 OIL - 173
175	177½	Tan limestone, dark brown shale 95-5, marcasite 2, blende ½, specks galena
177½	180	Light brown fossiliferous limestone, dark brown shale 99-1, marcasite 2, blende 4/10 CLAY - 180.3
180	182½	Green clay, brown limestone 90-10, marcasite ½
182½	185	Gray dolomitic limestone, dark brown dolomite 70-30, marcasite ½, blende 2/10 GLASS - 182.5
185	188	Gray dolomitic limestone, marcasite 6/10, blende 2/10 McGREGOR - 183.2

Total depth measured 188.0' with steel tape.
Water at 17'
Driller's Remarks: Ribby ground 110-140
Lost most of cuttings from 140-155
Soft ground 170-175
Claybed 181-183
6¼" hole

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 100' East from Drill Hole #17

ASSAY

	Blende	FeS_2	Galena
95 100	2.50	8.04	0.17
100 105	1.60	10.05	0.10
105 110	0.50	11.34	0.17
110 115	0.25	5.13	0.10
140 145	3.00	27.00	0.17
145 150	0.15	5.92	0.10
150 155	15.00	11.77	Trace
155 157½	2.35	13.91	"
157½ 160	0.67	5.35	"
165 167½	4.37	13.65	"
167½ 170	2.20	4.67	"
170 172½	0.80	7.70	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 23

Property Name: FRANCIS M. CALVERT
Began: 5-25-55 Finished:
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown Collar Elev. 944.78

DEPTH From	To	DESCRIPTION
0	6	Soil
6	10	Coarse cuttings: Buff dolomite, few specks marcasite
10	15	Coarse cuttings: Buff dolomite
15	20	Coarse cuttings: Buff dolomite
20	25	Buff dolomite
25	35	Brown-buff dolomite
35	40	Brown-buff dolomite, trace brown clay
40	45	Brown dolomite, few specks marcasite
45	50	Brown dolomite, little buff dolomitic ravellings, few specks marcasite
50	55	Brown dolomite, little buff dolomitic ravellings, few specks marcasite
55	60	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 7/10 DRAB - 57½
60	65	Brown dolomite, marcasite-speckled chert 90-10, marcasite 1, trace blende
65	70	Brown dolomite, gray-brown chert 96-4, marcasite 1½, trace blende
70	75	Brown dolomite, gray-brown chert 95-5, marcasite 1½, few specks blende
75	85	Brown dolomite, gray chert 99-1, marcasite 5, specks blende
85	95	Pale brown dolomite, smoky white chert 80-20, marcasite 3, blende 4/10, specks galena
95	100	Brown dolomite, marcasite-speckled chert 95-5, marcasite 4, blende 1
100	105	Brown dolomite, gray & marcasite-speckled chert 94-6, marcasite 8, blende 7/10
105	110	Brown dolomite, gray-brown chert 97-3, marcasite 4, blende 3/10
110	115	Brown dolomite, gray-brown chert 94-6, marcasite 3, blende 2/10
115	120	Brown dolomite, tan & gray chert 92-8, marcasite 5, blende 1/10
120	130	Brown dolomite, tan & gray chert 95-5, marcasite 1, trace blende
130	135	Brown dolomite, gray-brown chert 97-3, marcasite 1, blende 1/10
135	140	Brown dolomite, gray-brown chert 92-8, marcasite 6, blende 1½
140	145	Brown dolomite, gray-brown chert 80-20, marcasite 5, blende 1
145	150	Brown dolomite, gray-brown chert 95-5, marcasite 3, blende 8/10
150	155	Gray dolomite, brown dolomite 90-10, marcasite 3, blende 2 GRAY - 150.5
155	157½	No recovery

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
157½	160	Small recovery: Gray marcasite-speckled dolomite, marcasite 10, blende 3/10
160	162½	Small recovery: Brown-gray marcasite-speckled dolomite, marcasite 17, blende ½
162½	165	Small recovery: Brown-gray marcasite-speckled dolomite, marcasite 12, blende 1
165	167½	No recovery BLIK
167½	170	Fair recovery: Gray dark-speckled dolomite, marcasite 10, blende 2
170	172½	Gray dark-speckled dolomite & brown-gray dolomite, marcasite 9, blende 4/10
172½	175	Gray dark-speckled dolomite & brown-gray dolomite, brown fossiliferous dolomitic limestone 80-20, trace gray clay, marcasite 8, blende 3/10 OIL - 174½
175	177½	Brown fossiliferous dolomitic limestone, dark brown shale 60-40, marcasite 6, blende 4/10
177½	180	Green clay, brown fossiliferous dolomitic limestone 90-10, impossible to separate mineral CLAY - 177.7
180	182½	Brown dolomite (coarse cuttings), bentonite 80-20, marcasite 1, blende 1/10 GLASS - 180.5
182½	185	Gray dolomitic limestone, brown dolomite 90-10, trace chocolate brown shale, marcasite 4, blende ½ McGREGOR - 182.7

Total depth measured 185.5' with steel tape
Water at 21'

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 75' East from Drill Hole #21

ASSAY

		Blende	FeS_2	Galena
95	100	0.10	6.42	Trace
100	105	0.25	8.33	"
135	140	2.30	6.20	"
140	145	1.32	8.63	"
145	150	10.00	4.40	"
150	155	2.00	5.35	"
157½	160	0.70	12.04	"
160	162½	1.22	17.53	"
162½	165	0.25	17.16	"
167½	170	1.45	8.41	"
170	172½	0.57	12.10	"

Geologist: Harold W. Davis

U.S.G.S.

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 24

Property Name: FRANCIS M. CALWART
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown
Began: 5-28-53 Finished: 5-30-53

DEPTH From	To	DESCRIPTION
0	4	Soil
4	10	Coarse cuttings: Buff dolomite, few specks limonite
10	20	Coarse cuttings: Buff dolomite, trace limonite
20	25	Coarse cuttings: Buff & dark buff dolomite, trace limonite
25	30	Buff dolomite, dark ochre clay 95-5, limonite & marcasite 2
30	35	Brown-gray dolomite, buff dolomite 95-5, marcasite 4
35	40	Brown-gray dolomite, trace buff dolomite, marcasite 3, trace limonite DRAB - 47½
40	45	Brown & gray-brown dolomite, trace buff dolomite, marcasite 3, trace limonite
45	50	Brown-gray dolomite, light gray & tan chert 98-2, marcasite 2½, trace limonite
50	55	Brown-gray dolomite, light gray chert 94-6, marcasite 10, galena 7/10, blende 2/10
55	60	Brown-gray dolomite & brown dolomite, gray marcasite-speckled chert 88-12, dark ochre clay 3, marcasite 10, blende ½, few specks galena
60	65	Brown dolomite, gray-brown chert & gray marcasite-speckled chert 80-20, marcasite 8, trace blende, few specks galena
65	70	Gray-brown dolomite, gray-brown & marcasite-speckled chert 85-15, marcasite 9, blende 2/10, a speck galena
70	75	Brown-gray dolomite, marcasite-speckled chert 90-10, marcasite 8, blende 1/10
75	80	Light gray dolomite, white chert 60-40, marcasite 4, blende 2/10, specks galena
80	85	Light gray dolomite, white chert 93-7, marcasite 2, trace blende
85	90	Brown-gray dolomite, gray & white chert 95-5, marcasite 5, trace blende
90	95	Light brown-gray dolomite, gray chert 93-7, marcasite 5, trace blende
95	100	Brown dolomite, gray & marcasite-speckled chert 91-9, marcasite 4, specks blende
100	110	Light brown dolomite, gray & marcasite-speckled chert 96-4, marcasite 3, specks blende
110	115	Gray-brown dolomite, gray chert 92-8, marcasite 7
115	120	Brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 5
120	125	Brown dolomite, gray & marcasite-speckled chert 88-12, marcasite 2½
125	130	Brown dolomite, gray & brown chert 90-10, marcasite 1
130	135	Brown dolomite, few specks gray chert, few specks gr dolomite, marcasite ½ GRAY - 135
135	140	Gray dolomite, trace gray clay, marcasite 2, a sp
140	142½	Gray dolomite, marcasite 6
142½	145	Gray dolomite, marcasite 4

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
145	147½	Gray dolomite, marcasite 3, blende 1/10
147½	150	Gray dark-speckled dolomite, trace gray clay, marcasite 2, trace blende BLUE - 147½
150	152½	Gray dark-speckled dolomite, marcasite 2
152½	155	Gray dark-speckled dolomite, marcasite 1
155	157½	Brown dolomitic limestone, marcasite 6/10 OILROCK - 155
157½	160	Brown dolomitic limestone, dark brown shale 99-1, few fossils, marcasite 7/10, specks blende
160	162½	Brown fossiliferous dolomitic limestone, marcasite ½
162½	165	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 80 20, marcasite 4/10
165	167½	Brown fossiliferous dolomitic limestone & gray dark speckled fossiliferous dolomitic limestone, green clay 80-20, marcasite 2/10 CLAY - 167
167½	170	Light brown fine grained dolomite, gray dark-fossiliferous limestone 90-10, marcasite 2/10
170	172½	Light brown fine grained dolomite, marcasite ½, few specks blende OLA 5 - 168
172½	175	Light brown fine grained dolomite, gray fine grained dolomite 40-60, marcasite 3/10, specks blende
175	177½	Light gray fine grained dolomite, trace bentonite, marcasite 4/10 McGREGOR - 173.5

Total depth measured 177.5' with steel tape
Water

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 150' North from Drill Hole #21

Assays	Blende	FeS_2	Galena
50-55	0.10	13.00	1.02
55-60	0.05	13.48	0.12
60-65	0.05	11.98	0.13
65-70	0.05	10.05	0.12
70-75	0.05	11.34	0.12

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 25

Property Name: FRANCIS M. CALVERT
Began: 6-1-53 Finished: 6-3-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd J. Brown Elevation 947.51

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Brown-buff clay & ochre clay
10	15	Coarse cuttings: Buff dolomite, trace brown-buff clay, few specks marcasite
15	25	Coarse cuttings: Buff dolomite
25	35	Buff dolomite
35	50	Buff dolomite
50	60	Dark buff dolomite, brown-gray dolomite 65-35
60	65	Pale brown dolomite, light gray chert 94-6, few specks brown chert, trace marcasite DRAB - 62½
65	70	Brown dolomite, gray & tan chert 92-8, marcasite 2/10
70	85	Brown dolomite, gray & brown chert 93-7, marcasite 8/10
85	100	Brown dolomite, light gray chert 95-5, marcasite 3/10
100	115	Pale brown dolomite, light gray chert 99-1, marcasite 4/10
115	130	Brown dolomite, gray marcasite-speckled shale, light gray chert 90-6-4, marcasite 8
130	135	Brown dolomite, light gray chert 99-1, marcasite 18
135	140	Small recovery: Brown dolomite, trace gray chert, trace dark gray clay, marcasite 9
140	145	Brown dolomite, tan & gray chert 94-6, marcasite 20
145	150	Brown dolomite, tan & brown chert 92-8, marcasite 10
150	155	Brown dolomite, tan chert 97-3, marcasite 7
155	160	Brown dolomite, few specks tan chert, marcasite 7
160	165	Gray dolomite, brown dolomite 90-10, marcasite 4 GRAY - 160.5
165	170	Gray dolomite, marcasite 2
170	172½	Brown-gray dolomite, marcasite 2
172½	175	Brown-gray dolomite, marcasite 1 BLUE - 175.0
175	177½	Dark gray dark-speckled dolomite, gray clay 2, marcasite 6/10
177½	180	Brown dolomitic limestone, gray clay, dark buff clay 70-20-10, marcasite 4/10 OIL - 178 a speck blende
180	182½	Brown fossiliferous dolomitic limestone, dark brown shaly limestone 92-8, marcasite 6/10, a speck blende
182½	185	Light brown limestone, dark brown shaly limestone 96-4, marcasite ↑
185	187½	Green clay, brown dolomitic limestone 80-20, marcasite 8/10 CLAY - 185.5
187½	190	Gray clay, dark brown sugary dolomite 60-40, chocolate brown shale 1, marcasite 3/10 GLASS - 189.0
190	192½	Gray dolomitic limestone, dark brown ~~dolomite~~ & brown limestone 70-30, chocolate brown shale 3, marcasite 2/10
192	195	Gray dolomitic limestone, trace marcasite McGREGOR - 190.7 Total depth measured 195.0' with steel tape Water 23'

Location of Hole: 125' South from Drill Hole #16

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 26

Property Name: FRANCIS M. CALVERT
Began: 6-4-53 Finished: 6-8-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elevation 980.23

DEPTH From	To	DESCRIPTION
0	5	Soil
5	15	Buff dolomite
15	30	Buff dolomite
30	40	Buffish-brown dolomite & buff dolomite, few specks marcasite
40	50	Brown dolomite, specks calcite, marcasite 2/10, specks galena
50	55	Brown dolomite, specks calcite, trace marcasite
55	60	Brown dolomite, marcasite 3/10, few specks blende
60	65	Brown dolomite, gray marcasite-speckled chert, dark brown shale 95-3-2, marcasite 5, trace blende & galena DRAB - 62½
65	70	Brown dolomite, gray marcasite-speckled chert 92-8, trace gray shale, marcasite 12, blende 2
70	75	Brown dolomite, brown & gray-marcasite-speckled chert 93-7, marcasite 7, blende 1
75	80	Brown dolomite, gray marcasite-speckled chert 93-7, trace brown shale, marcasite 9, blende ½, few specks galena
80	85	Brown dolomite, gray & marcasite-speckled chert 97-3, specks brown shale, marcasite 6, blende 1, few specks galena
85	90	Brown dolomite, gray marcasite-speckled chert 94-6, trace brown shale, marcasite 5, blende 3, few specks galena
90	95	Brown dolomite, gray chert 99-1, brown shale ½, marcasite 5, blende 2, trace galena
95	100	Pale brown dolomite, gray & white chert 80-20, trace brown shale, marcasite 8, blende 1, few specks galena
100	105	Small recovery: Brown dolomite, gray chert 97-3, marcasite 6 blende ½
105	110	Brown dolomite, gray marcasite-speckled chert 96-4, marcasite 8, blende 4/10
110	115	Gray dolomite, gray chert 99-1, marcasite 6, blende 2
115	120	Brown dolomite, gray chert 93-7, marcasite 10, blende 8/10
120	125	Brown dolomite, gray & brown chert 98-2, marcasite 8, blende 2/10
125	130	Light brown dolomite, gray-brown chert 94-6, marcasite 8, blende 1/10
130	135	Light brown dolomite, gray-brown chert 94-6, marcasite 7, blende 1/10
135	140	Dark brown dolomite, marcasite-speckled chert 94-6, marcasite 7, trace blende
140	145	Dark brown dolomite, marcasite-speckled 92-8, marcasite 15, few specks blende
145	150	Brown dolomite, brown & marcasite-speckled chert 88-12, marcasite 8, few specks blende
150	155	Brown dolomite, gray-brown & brown chert 92-8, marcasite 5
155	160	Brown dolomite, gray dolomite 70-30, marcasite 3 GRAY - 158.5
160	162½	Gray dolomite, marcasite 4

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Property Name: FRANCIS M. CALWART

From	To	
162½	165	Gray dolomite, marcasite 2
165	167½	No recovery
167½	170	No recovery
170	172½	Brown-gray dolomite, marcasite 6, blende 2
172½	175	Brown-gray dolomite, marcasite 9, blende 3 BLUE - 175.0
175	177½	Gray dark-speckled dolomite, marcasite 6, blende 3
177½	180	Gray dark-speckled dolomite, marcasite 5, blende 2
180	182½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20 marcasite 4, blende 1 OIL - 180.5
182½	185	Brown dolomitic limestone, marcasite 2, blende 6/10
185	187½	Brown dolomitic limestone, brown clay 80-20, marcasite 2, blende 7/10 CLAY - 187.5
187½	190	Green clay, trace marcasite, trace blende GLASS - 192.5
190	192½	Grey clay (Bentonitic)
192½	195	Gray dolomitic limestone, brown dolomite & chocolate brown shale 90-10, marcasite 2, blende ½ MoCASSOR - 192.7

Total depth measured 196.0' with steel tape.
Water 26'

Location of Hole: 75' North from Drill Hole #20

Assays	Blende	ZnSn	Galena
65 - 70	0.80	11.34	0.12
70 - 75	Nil.	10.27	0.12
75 - 80	0.10	9.84	0.12
80 - 85	0.15	8.98	0.13
85 - 90	1.70	7.49	0.13
90 - 95	0.55	5.77	0.13
95 -100	0.10	9.84	0.13
100 -105	0.30	13.48	Trace
105 -110	1.35	15.40	
110 -115	1.65	11.98	0.16
115 -120	0.75	17.33	0.16
120 -125	0.45	11.98	0.12
170 -172½	2.55	7.91	0.16
172½-175	2.05	7.70	0.12
175 -177½	1.30	10.91	0.13
177½-180	1.50	8.34	0.13
180 -182½	0.75	10.70	0.16
182½-185	0.45	7.70	0.16
185 -187½	1.00	7.70	0.16

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 27

Property Name: FRANCIS M. CALVERT
Began: 6-9-53 Finished: 6-11-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Collar Elevation 986.35

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buff dolomite, few specks limonite & marcasite
10	15	Buff dolomite, few specks limonite & marcasite, a speck blende
15	20	Buff dolomite, trace limonite
20	30	Buff dolomite, few specks limonite
30	35	Buff dolomite
35	40	Buff dolomite, brown dolomite 50-50, trace marcasite, a speck galena
40	45	Brown dolomite (coarse cuttings), buff dolomite 70-30, marcasite ½
45	50	Brown dolomite, marcasite 3/10, a speck blende & galena
50	55	Brown dolomite, marcasite 1/10, thin trace blende
55	60	Brown dolomite, a speck calcite, trace marcasite
60	65	Brown dolomite, a speck calcite, marcasite 1/10, a speck blende
65	70	Brown dolomite, gray marcasite-speckled & brown chert 93-7, marcasite 1/10, blende 2/10 DRAB - 87
70	75	Brown dolomite, gray, marcasite-speckled & brown chert 92-8, marcasite 1, blende 1/10
75	80	Brown dolomite, brown & gray chert 96-4, marcasite 8/10, blende 1/10, trace galena
80	85	Brown dolomite, gray-brown chert 93-7, blende 5, marcasite 1 galena 1/10
85	87½	Brown dolomite, trace gray-brown chert, blende 2, marcasite 7/10, trace galena
87½	90	Brown dolomite, tan & gray-brown chert 95-5, blende 2, marcasite 1, trace galena
90	95	Brown dolomite, gray-brown chert 98-2, marcasite 2, blende 8/10, few specks galena
95	100	Brown dolomite, gray & white chert 92-8, marcasite 4, blende 1, trace galena
100	105	Brown-gray dolomite, gray & white chert 90-10, marcasite 2, blende 1, specks galena
105	110	Brown dolomite, white chert 99-1, trace gray shale, marcasite 7, blende 2, specks galena
110	115	Brown dolomite, gray & gray-brown chert 82-18, marcasite 4, blende 7/10, trace galena
115	120	Brown dolomite, gray-brown & marcasite-speckled chert 96-4, marcasite 7, blende 2
120	125	Brown dolomite, gray-brown chert 94-6, marcasite 3, blende ½
125	130	Brown dolomite, gray & tan chert 95-5, marcasite 2, blende 2/10
130	135	Brown dolomite, tan chert 97-3, marcasite 6, blende 1
135	140	Brown dolomite, marcasite 3, blende 4/10
140	145	Brown dolomite, marcasite 4, few specks blende

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Property Name: FRANCIS M. DAIWART

From	To	
145	150	Very small recovery: Brown dolomite, gray-brown & marcasite-speckled chert 92-8, marcasite 6, blende 3
150	155	Small recovery: Brown dolomite, marcasite-speckled chert 90-10, marcasite 10, blende 4
155	160	Brown dolomite, brown chert 93-7, marcasite 3, blende 1/10
160	165	Brown dolomite, trace brown chert, marcasite 3, blende 6/10
165	167½	Brown dolomite, marcasite 14, blende 4
167½	170	Brown dolomite, marcasite 9, blende 4 GRAY - 167½
170	172½	Gray dolomite, marcasite 19, blende 3
172½	175	Gray dolomite, marcasite 10, blende 2
175	177½	Small recovery: Brown-gray dolomite, marcasite 18, blende 7
177½	180	Very small recovery: Brown-gray dolomite, marcasite 20, blende 12
180	182½	Gray-brown dolomite, gray clay 95-5, marcasite 50, blende 20
182½	185	Gray dark-speckled dolomite & gray clay, some fossils, marcasite 30, blende 8 BLUE - 182½
185	187½	Dark brown shaly limestone, gray clay 90-10, marcasite 15, blende 4 OIL - 185½
187½	190	Light brown limestone, dark brown shaly limestone 60-40, marcasite 20, blende 8
190	192½	Light brown limestone, marcasite 15, blende 5
192½	195	Green clay, light brown limestone 98-2, few phosphate pebbles, marcasite 1, trace blende CLAY - 192½
195	197½	Dark brown dolomitic limestone, gray dolomite limestone, chocolate brown shale 93-5-2, marcasite 4, blende 1 GLASS - 195
197½	200	Gray & brown gray dolomitic limestone, marcasite 3, blende 7/10 McGREGOR - 197.4
200	202½	Gray marcasite-speckled dolomitic limestone, marcasite 3, blende 1
202½	205	Gray-brown marcasite-speckled dolomitic limestone, marcasite 2, blende 4/10
205	207½	Gray dark-speckled dolomitic limestone, marcasite 1, blende ½, few specks green shale
207½	210	Gray dark-speckled limestone, marcasite 1, blende ½, few specks green shale

Total depth measured 211.3' with steel tape.
Water

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: South 75° West 100' from #26

(Continued on next page)

Geologist: Harold E. Davis

RCLA NO. 27
Continued

Property Name: FRANCIS M. CALWART

From To

Assays	Blende	FeS2	Galena
80 - 85	14.80	4.49	0.45
85 - 87½	4.62	4.28	0.16
87½- 90	2.55	5.13	0.12
90 - 95	0.95	4.05	0.13
95 -100	0.95	4.70	0.13
100 -105	1.85	5.99	0.13
105 -110	1.65	8.56	0.15
110 -115	0.05	8.13	0.13
115 -120	0.20	10.91	0.13
120 -125	0.05	4.92	0.13
125 -130	0.05	4.06	0.15
130 - 135	0.15	6.84	0.13
135 -140	Nil	8.42	0.15
140 -145	"	7.49	0.15
145 -150	3.95	9.20	0.12
150 -155	1.95	17.76	0.70
155 -160	Nil	6.94	0.13
160 -165	0.30	5.86	0.13
165 -167½	4.55	11.34	0.13
167½-170	3.20	8.77	0.13
170 -172½	1.70	11.85	0.13
172½-175	1.20	12.84	0.13
175 -177½	8.00	16.26	0.15
177½-180	8.80	16.47	0.16
180 -182½	7.95	47.00	Trace
182½-185	3.55	38.00	0.15
185 -187½	2.05	22.47	0.25
187½-190	3.50	18.83	0.12
190 -192½	3.55	15.82	0.12
192½-195	0.90	12.84	0.12
195 -197½	0.05	10.05	0.15
197½-200	1.00	10.27	0.16
200 -202½	1.65	9.65	Trace
202½-205	0.25	9.63	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 28

Property Name: FRANCIS M. CALVERT
Began: 6-11-53 Finished: 6-15-53
Drill Owner: John F. Robinson
Drill Runner: L. F. Brown

Collar Elevation 952.44

DEPTH From	To	DESCRIPTION
0	8	Soil
8	10	Buff dolomite, trace red & dark buff chert (coarse cuttings)
10	15	Buff dolomite
15	25	Buff dolomite
25	45	Buff dolomite
45	50	Dark buff dolomite, brown dolomite 95-5
50	55	Buffish-brown dolomite
55	60	Buffish-brown dolomite
60	65	Buffish-brown calcareous dolomite
65	70	Buffish-brown calcareous dolomite, few specks marcasite
70	75	Brown dolomite, brown chert 97-3, trace marcasite, a speck blende DRAB = 72½
75	80	Brown dolomite, gray & marcasite-speckled chert 93-7, marcasite ½
80	85	Brown dolomite, gray-brown & marcasite-speckled chert 85-15, marcasite 4
85	90	Brown dolomite, gray-brown & marcasite -speckled chert 92-8, marcasite 3
90	100	Brown dolomite, gray & tan chert 94-6, marcasite 3
100	105	Pale brown dolomite, gray & white chert 80-20, marcasite 3/10
105	115	Gray-brown dolomite, gray, white & marcasite-speckled chert 95-5, marcasite 1½
115	125	Brown dolomite, gray-brown & tan chert 93-7, marcasite 6/10, blende 1/10
125	135	Brown dolomite, tan & marcasite-speckled chert 95-5, marcasite 2, trace blende
135	140	Brown dolomite, trace tan chert, marcasite 5, few specks blende
140	150	Brown dolomite, gray-brown & marcasite-speckled chert 94-6, marcasite 8, specks blende
150	160	Brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 5, specks blende
160	165	Brown dolomite, marcasite-speckled chert 94-6, marcasite 15, blende 4
165	167½	Brown dolomite, gray marcasite-speckled dolomite 80-20, marcasite 20, blende 6 GRAY * 167
167½	170	Gray marcasite-speckled dolomite, marcasite 9, blende 2
170	172½	Gray dolomite (some marcasite-speckled), marcasite 8, blende 3
172½	175	Gray marcasite-speckled dolomite, marcasite 7, blende 1
175	177½	Brown-gray dolomite, marcasite 4, blende 3/10
177½	180	Gray-brown dolomite, marcasite 10, blende 2/10
180	182½	Gray dolomite, marcasite 3, trace blende BLUE - 182½
182½	185	Gray clay, gray marcasite-speckled dolomite 80-40, marcasite 6, specks blende
185	187½	Gray dark-speckled dolomite, gray clay 70-30, marcasite 8, specks blende OIL - 188

Property Name: FRANCIS M. CALWERT

From	To	
187½	190	Brown marcasite-speckled dolomite, gray clay 80-20, marcasite 14, a speck blende
190	192½	Brown fossiliferous shaly limestone & brown clay, marcasite 7 blende 1/10 CLAY - 195
192½	195	Brown fossiliferous shaly limestone & brown clay, green clay 95-5, marcasite 2, trace blende
195	197½	Gray & green clay, gray fossiliferous dolomitic limestone 80-20, marcasite 1, few specks blende
197½	200	Gray clay, brown dolomitic limestone 70-30, marcasite 3/10, few phosphate pebbles GLASS - 199.2
200	202½	Fairly coarse cuttings: Brown dolomitic limestone, gray dolomitic limestone 50-50, marcasite 4/10, few specks blende McGREGOR - 201.2

Total depth measured 203.9' with steel tape.
Water

Location of Hole: 100' South from Drill Hole #27

Assays

	Blende	FeS_2	Galena
160 - 165	2.65	16.69	Trace
165 - 167½	2.60	17.12	0.16
167½ - 170	0.70	11.34	0.13
170 - 172½	1.40	13.26	0.13
172½ - 175	0.70	11.34	0.13

Geologist: Marvin W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 29

Property Name: FRANCIS M. CALVERT
Began: 6-16-53 Finished: 6-18-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Cellar Elevation 967.59

DEPTH From	To	DESCRIPTION
0	6	Buff-brown clay
6	10	Buff dolomite, few cuttings gray-brown dolomite, specks green shale
10	20	Buff dolomite, few specks marcasite
20	30	Buff dolomite
30	40	Buff dolomite
40	55	Buff dolomite
55	65	Dark buff dolomite
65	70	Dark buff dolomite
70	75	Dark buff dolomite, few specks marcasite & calcite
75	80	Brown-gray dolomite, dark buff dolomite 60-40, brown chert 4, trace marcasite
80	85	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 3
85	90	Brown dolomite, gray-brown chert 94-6, marcasite 2½
90	100	Brown dolomite, gray-brown chert 95-5, marcasite 2
100	110	Brown dolomite, gray chert 99-1, marcaiste 4/10
110	120	Pale brown-gray dolomite, gray & white chert 92-8, trace green shale, marcasite 7/10
120	130	Pale brown-gray dolomite, gray & white chert 93-7, green shale ½, marcasite 3
130	135	Pale brown-gray dolomite, gray & white chert 97-3, trace green shale, marcasite 2, blende ½
135	140	Light brown dolomite, light tan chert 98-2, trace green shale, marcasite 1, blende 4/10
140	145	Brown dolomite, tan & marcasite-speckled chert 97-3, few specks green shale, marcasite 2, blende 1
145	150	Brown marcasite-speckled dolomite, marcasite 18, blende 3
150	155	Dark brown marcasite-speckled dolomite, marcasite 25, blende 4
155	157½	Dark brown marcasite-speckled dolomite, marcasite-speckled chert 93-7, marcasite 20, blende 3
157½	160	Brown dolomite, gray marcasite-speckled chert 82-18, marcasite 22, blende 1
160	165	Dark brown dolomite, marcasite-speckled chert 85-15, marcasite 15, blende 2/10
165	170	Dark brown marcasite-speckled dolomite, marcasite 15, blende ½
170	172½	Dark brown marcasite-speckled dolomite, marcasite-speckled 99-1, marcasite 9, blende 4
172½	175	Gray dolomite, brown dolomite 90-10, marcasite 5, blende 7
175	177½	Gray dolomite, marcasite 2, blende 4/10 GRAY - 172.7
177½	180	Gray marcasite-speckled dolomite, marcasite 5, blende 1
180	182½	Brown-gray marcasite-speckled dolomite, marcasite 15, trace blende
182½	185	Brown-gray marcasite-speckled dolomite, marcasite 10, blende 1

Property Name: FRANCIS M. CALVERT

From	To	
185	187½	Brown-gray marcasite-speckled dolomite, trace gray clay, marcasite 10, blende 2 BLUE - 187½
187½	190	Gray dark-speckled dolomite, marcasite 8, blende 8/10
190	192½	Gray dark-speckled dolomite, marcasite 4, blende 2/10
192½	195	Brown fossiliferous dolomitic limestone, gray clay & gray dark-speckled dolomite 60-40, marcasite 60, blende 20 OIL - 193½
195	197½	Brown fossiliferous dolomitic limestone & brown shaly limestone, marcasite 40, blende 15
197½	200	Light brown lime tone & dark brown shaly limestone, marcasite 8, blende 4
200	202½	Light brown limestone, green clay 80-20, marcasite 5, blende 1 CLAY - 202
202½	205	Green clay, little light brown limestone ravellings, marcasite 1, trace blende
205	207½	Dark brown sugary dolomite, chocolate brown shale 97-3, light brown limestone (Oilrock) ravellings 10%, calcite 1, marcasite 20, blende 4 GLASS - 205
207½	210	Gray dolomitic limestone, light brown limestone (Oilrock ravellings) 20, marcasite 12, blende 3
210	212½	Gray dolomitic limestone, light brown limestone (Oilrock ravellings) 20, marcasite 5, blende 4
212½	215	Gray-brown dolomitic limestone, light brown limestone (Oilrock ravellings) 10, marcasite 8, blende 6, few specks galena
215	217½	Gray dolomitic limestone, trace Oilrock ravellings, marcasite 5, blende 2
217½	220	Gray dolomitic limestone & gray clay, trace Oilrock ravellings, marcasite 2, blende 6/10 McGREGOR - 217½

Total depth measured 220'
Water
Driller's remarks:
Broken ground 145 - 175
Soft ground 177½ - 180 & 187½ - 220

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 180' West & 50' South from Drill Hole #27

Geologist: Harold A. Davis

HOLE NO. 29
Continued

Page 3

Property Name: FRANCIS M. CALVERT

From To

Assay	Blende	FeS_2	Galena
140 -145	1.05	2.99	0.12
145 -150	0.80	10.00	0.12
150 -155	2.70	12.19	0.13
155 -157½	2.05	11.77	0.13
157½-160	0.20	11.55	0.13
160 -165	Nil	12.19	0.15
165 -170	0.20	14.55	0.13
170 -172½	5.10	9.20	0.16
172½-175	4.35	7.70	0.15
175 -177½	1.10	4.06	0.15
177½-180	0.50	8.34	0.16
180 -182½	0.15	19.04	0.17
182½-185	1.80	12.41	0.13
185 -187½	0.75	13.26	0.12
187½-190	0.10	12.62	0.12
190 -192½	0.05	11.98	0.12
192½-195	13.00	52.64	0.20
195 -197½	6.25	46.65	0.13
197½-200	2.20	14.76	0.15
200 -202½	1.65	19.26	0.15
202½-205	0.55	16.47	0.13
205 -207½	2.15	36.59	0.13
207½-210	1.55	25.68	0.13
210 -212½	5.35	14.76	0.16
212½-215	6.10	15.91	0.17
215 -217½	1.85	19.68	0.15
217½-220	1.20	11.98	0.12

Geologist: Harold W. Davis

DRILL RECORD
The [illegible]le-Fisher Company

HOLE NO. 30

Property Name: FRANCIS M. CALWERT
Began: 6-16-53 Finished: 6-23-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Collar Elevation 972.03

DEPTH From	To	DESCRIPTION
0	8	Brown-buff clay
8	15	Coarse cuttings: Buff dolomite
15	25	Buff dolomite, few specks marcasite
25	45	Buff dolomite, specks limonite
45	65	Buff dolomite
65	75	Buff calcareous dolomite
75	80	Buff calcareous dolomite DRAB - 82½
80	85	Buff dolomite, gray & brown & white chert 95-5
85	90	Buff dolomite, gray & brown chert 93-7, marcasite 4/10
90	95	Buff dolomite, gray & brown & white chert 92-8, marcasite 3/10
95	100	Brown & buffish-brown dolomite, gray & brown chert 94-6, marcasite 7/10
100	105	Brown & buffish-brown dolomite, gray & brown chert 93-7, marcasite 2/10
105	110	Brown & buffish-brown dolomite, gray & brown chert 94-6, marcasite 1/10
110	120	Pale brown dolomite, light gray & white chert 92-8, trace marcasite
120	130	Pale brown dolomite, gray chert 99-1, marcasite 5/10
130	140	Brown dolomite, gray-brown chert, gray shale 95-3-2, marcasite 2/10
140	150	Brown dolomite, brown & tan chert 95-5, gray shale 2, marcasite 1/10
150	155	Brown dolomite, brown chert trace, gray shale 1, marcasite 1/10
155	160	Brown dolomite, trace gray-brown chert, trace gray shale, marcasite 1/10
160	165	Brown dolomite, tan chert 95-5, few specks gray shale, marcasite 1/10
165	170	Brown dolomite, gray, brown & tan chert, 85-15, marcasite 1.5
170	175	Brown dolomite, gray & brown chert 92-8, marcasite 5
175	180	Brown dolomite, gray & tan chert 96-4, marcasite 7
180	185	Gray dolomite, marcasite 5, Top "GRAY" - 180
185	187½	Gray dolomite, trace gray clay, trace dark gray clay, marcasite 2
187½	190	Gray dolomite, few specks dark gray clay, marcasite 6/10
190	192½	Brown-gray dolomite, marcasite 1
192½	195	Brown-gray dolomite, trace dark gray clay, marcasite 3
195	197½	Gray & brown-gray dark speckled dolomite & gray clay 85-15, marcasite 2 BLUE - 195
197½	200	Gray dark speckled dolomite, trace gray clay, marcasite 2
200	202½	Gray dark-speckled dolomite & gray clay 70-30, marcasite ½
202½	205	Brown dolomitic limestone, gray dark speckled dolomite & gray clay 80-20, marcasite 6/10, few specks blende OIL - 205
205	207½	Brown fossiliferous dolomitic limestone, marcasite 4/10, few specks blende

Geologist: Harold E. Davis

HOLE NO. 30
Continued

Page 2

Property Name: FRANCIS M. CALVART

From	To	
207½	210	Brown limestone, few fossils, marcasite 3/10, specks blende
210	212½	Brown fossiliferous limestone, green clay 60-40, marcasite 3/10, few phosphate pebbles CLAYBED - 211.5
212½	215	Bentonite, brown dolomitic limestone 80-20, trace dark brown shaly limestone, marcasite 1/10 GLASS - 214.5
215	217½	Dark brown dolomitic limestone, marcasite 1
217½	220	Gray dolomitic limestone, dark brown dolomitic limestone 80-20, few specks chocolate brown shale, marcasite 1, specks blende McGREGOR - 218
220	222½	Gray dark speckled dolomite, Oilrock & Glassrock ravellings 5, marcasite 1
222½	225	Brown-gray dolomitic limestone, Oilrock & Glassrock ravellings 5, marcasite 4/10

Total depth measured 225.3' with steel tape
Water at 48½'

Location of Hole: South 50° West 200' from #29

Land Description: Northwest ¼ of Southeast ¼

Geologist: Harold N. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 31

Property Name: FRANCIS M. CALWERT
Began: 6-23-53 Finished: 6-25-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

Collar Elevation 930.42

DEPTH From	To	DESCRIPTION
0	5	Soil
5	8	Buff clay
8	15	Buff dolomite, dark buff chert & red chert 95-5, a speck marcasite
15	20	Buff dolomite, dark buff chert & red chert 92-8, specks marcasite
20	25	Buffish-brown dolomite, dark buff chert & red chert 98-2, specks marcasite
25	30	Buffish-brown dolomite, dark buff chert & red chert 98-2, marcasite 3/10
30	35	Brown dolomite, dark buff chert & red chert 99-1, marcasite 1/10
35	40	Brown dolomite, trace limonite-stained clay, marcasite 2/10
40	45	Brown dolomite, specks calcite, trace marcasite
45	50	Brown dolomite, gray chert 98-2, marcasite 1 DHAB - 47½
50	60	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 5, trace blende
60	70	Brown dolomite, gray marcasite-speckled chert 90-10, marcasite 3, few specks blende
70	80	Brown dolomite, gray & white chert 91-9, marcasite 2, few specks blende
80	85	Brown dolomite, few specks gray chert, marcasite 4/10, specks blende
85	90	Brown dolomite, gray chert 96-4, marcasite 2, trace blende
90	95	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 4, blende ½
95	100	Brown dolomite, gray & marcasite-speckled chert 99-1, marcasite 5, blende 4
100	102½	Brown dolomite, gray-brown & tan chert 96-4, marcasite 6, blende 8/10
102½	105	Brown dolomite, gray-brown chert 94-6, marcasite 9, blende 1
105	110	Brown dolomite, tan chert 93-7, dark buff chert ravellings from top of hole 5, marcasite 12, blende 1
110	115	Brown dolomite, marcasite-speckled chert 91-9, marcasite 11, blende ½
115	120	Brown dolomite, marcasite-speckled chert 98-2, marcasite 16, blende 1½
120	125	Brown dolomite, tan & marcasite-speckled chert 95-5, marcasite 6, few specks blende
125	130	Brown dolomite, marcasite-speckled chert 80-20, marcasite 20 blende ½ (?)
130	135	Brown dolomite, marcasite-speckled chert 90-10, marcasite 15 few specks blende
135	140	Gray dolomite, brown dolomite 80-20, marcasite-speckled chert 3, marcasite 8, trace blende, Top "GRAY" - 136
140	142½	Gray dolomite, marcasite 8, few specks blende

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
142½	145	Gray dolomite, marcasite 5
145	147½	Gray dolomite, marcasite 12, few specks blende
147½	150	Brown gray dolomite, marcasite 9, blende 2/10
150	152½	Brown-gray dolomite, marcasite 3, trace blende
152½	155	Gray dark-speckled marcasite-speckled dolomite, marcasite 10 (?), few specks blende BLUE - 152½
155	157½	Gray dark-speckled dolomite, marcasite 10 (?), blende 3/10
157½	160	Gray dark-speckled dolomite, marcasite 5, trace blende
160	162½	Gray-brown fossiliferous dolomitic limestone, gray dark-speckled dolomite 80-20, marcasite 5, specks blende OILROCK - 160½
162½	165	Brown fossiliferous dolomitic limestone, & dark brown shaly limestone, marcasite 4/10, specks blende & galena
165	167½	Green clay & gray clay (bentonitic), (considerable buff dolomitic ravellings), gray-brown & brown dolomitic limestone 80-20, marcasite ½ CLAY - 165½
167½	170	Dark brown limestone, chocolate brown shale 99-1, specks calcite, marcasite 3, few specks blende GLASS - 167½
170	172½	Gray dolomitic limestone, brown limestone 90-10, marcasite 5, few specks blende
172½	175	Brown-gray marcasite-speckled dolomite limestone, marcasite 3, specks blende MaGREGOR - 170.2

Total depth measured 175.7' with steel tape.
Water at 8'

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: South 55° East 100' from # 22

Assay	Blende	FeS_2	Galena
90 - 95	1.25	10.70	0.15
95 - 100	5.50	9.20	0.15
100 - 102½	0.65	11.12	0.15
102½ - 105	0.70	14.12	Trace
105 - 110	0.10	13.91	0.12
110 - 115	0.25	13.48	0.12
115 - 120	0.30	13.48	Trace
120 - 125	0.05	7.49	0.12
125 - 130	0.10	21.40	0.12

Geologist: Marcus

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 32

Property Name: FRANCIS M. CALVERT
Began: 6-26-53 Finished: 6-30-53
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

Collar Elev. 931.38'

DEPTH From	To	DESCRIPTION
0	7	Soil
7	15	Brown-buff dolomite, creek gravel 85-15, limonite 1, coarse cuttings
15	20	Brown-buff dolomite, creek gravel 80-20, few specks limonite, coarse cuttings
20	30	Brown-buff dolomite, creek gravel 97-3, trace marcasite
30	40	Buffish-brown calcareous dolomite, creek gravel 96-4, trace marcasite
40	45	Buffish-brown calcareous dolomite, creek gravel 98-2, few specks marcasite
45	50	Brown calciareous dolomite, trace brown chert, creek gravel 1, marcasite 3/10, a speck blende DRAB - 50
50	55	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 2, a speck blende
55	60	Brown dolomite, gray-brown chert 96-6, marcasite 3, trace blende
60	70	Brown dolomite, brown & gray-brown chert 90-10, marcasite 1, a speck blende
70	80	Brown dolomite, gray & white chert 88-12, marcasite 2, a speck blende
80	90	Gray dolomite, gray & white chert 95-5, marcasite ½, trace blende
90	100	Pale brown dolomite, gray & tan chert 94-6, marcasite 4, blende 1/10
100	110	Brown dolomite gray & tan chert 97-3, marcasite 5, blende 2/10
110	115	Brown dolomite, tan chert 98-2, green shale 2, marcasite 4, trace blende
115	120	Brown dolomite, green shale 95-5, marcasite 4
120	125	Brown dolomite, green shale 93-7, marcasite 12, a speck blende
125	130	Brown dolomite, tan che t 97-3, green shale 1, marcasite 8
130	135	Brown dolomite, tan & brown che t 93-7, green shale 4, marcasite 4, specks blende
135	140	Brown dolomite, tan & brown chert 99-1, trace green shale, marcasite 18
140	145	Gray dolomite, brown dolomite 80-20, marcasite 8, specks blende GRAY - 141
145	147½	Gray dolomite, marcasite 7
147½	150	Gray dolomite, marcasite 2
150	152½	Brown-gray dolomite, marcasite 5, few specks blende
152½	155	Brown-gray dolomi te, marcasite 3, specks blende
155	157½	Gray dolomite, marcasite 4, specks blende
157½	160	Gray dolomite, few specks gray dark-speckled dolomite, marcasite 4, specks blende BLUE - 160
160	162½	Gray dark-speckled dolomite, marcasite 30, blende 25

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
162½	165	Gray dark-speckled dolomite, marcasite 40, blende 18
165	167½	Gray dark-speckled dolomite, marcasite 50, blende 35
167½	170	Very soft light brown limestone, dark brown shale 80-20, marcasite 15, blende 10 OIL - 167½
170	172½	Very soft light brown limestone, dark brown shaly limestone, marcasite 5, blende 3
172½	175	Very soft brown shaly limestone, green clay 95-5, marcasite 2, blende 1, few specks galena CLAY BED - 174.9
175	177½	Dark brown dolomitic limestone & limestone, gray clay 5, marcasite 7, blende 4 GLASS - 175.2
177½	178½	Gray dolomitic limestone, brown dolomitic limestone 80-20, marcasite 8, blende 5 McGREGOR - 177.7
178½	180	Gray dolomitic limestone, brown dolomitic limestone ravellings 2, marcasite 12, blende 3
180	182½	Gray dolomitic limestone, brown dolomitic limestone ravellings 3, marcasite 51, blende 7

Total depth measured 182' with steel tape.
Water at 8'

175-182.5 - caving from Blue

Location of Hole: South 45° West 70' from Drill Hole #31

Assay	Blende	FeS_2	Galena
160 - 162½	32.80	36.80	0.16
162½ - 165	14.50	25.25	0.13
165 - 167½	20.05	28.24	0.13
167½ - 170	13.75	18.83	0.12
170 - 172½	4.90	16.69	0.12
172½ - 175	2.65	15.19	0.13
175 - 177½	8.55	21.40	0.18
177½ - 178½	13.50	18.80	0.15
178½ - 180	10.35	12.41	0.12
180 - 182½	9.20	16.90	0.13

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 33.

Property Name: FRANCIS M. CALVERT
Began: 6-30-'53 Finished: 7-6-'53.
Drill Owner: J. P. Robinson
Drill Runner: L. J. Brown.

COLLAR ELEVATION: 935.41'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	4	Soil
4	10	Buff dolomite, trace brown-gray dolomite, trace marcasite, few specks of blende
10	15	Buff dolomite, trace brown-gray dolomite, trace marcasite, few specks blende, a speck of galena.
15	20	Dark buff dolomite, thin trace limonite and marcasite, few specks of blende and galena.
20	25	Buffish-brown dolomite, few specks marcasite
25	30	Brown-gray dolomite, few specks of marcasite
30	35	Pale brown dolomite (slightly calcareous) marcasite 2/10
35	40	Buffish brown calcareous dolomite, marcasite 3/10
40	45	Buffish brown calcareous dolomite, marcasite 5/10
45	50	Buffish brown dolomite, marcasite 1 DRAB - 52.5'
50	55	Buffish brown dolomite, gray-brown chert and brown chert 93-7, marcasite 1.
55	60	Brown dolomite, gray-brown chert 92-8, marcasite 7/10
60	70	Brown dolomite, gray-brown and tan chert 93-7, marcasite 2
70	80	Brown dolomite, gray-brown chert 94-6, marcasite 3
80	90	Pale brown dolomite, gray and white chert 85-15, marcasite 4/10, few specks of blende
90	100	Pale brown dolomite, gray and white chert 95-5, marcasite 1/2, blende 2/10
100	105	Brown dolomite, gray-brown chert 92-8, marcasite 3, blende 1/2
105	110	Brown dolomite, gray-brown chert 98-2, light gray shale 1, marcasite 2, blende 1.
110	115	Lost cuttings
115	120	Very small recovery: Brown dolomite, gray chert 94-6, marcasite 10, blende 30
120	125	Only a tablespoonful of cuttings plus one coarse piece of brown-gray dolomite, marcasite 10, blende 25
125	127½	Very small recovery: Brown-gray dolomite, few specks gray chert, trace gray cave filling, marcasite 8, blende 15
127½	130	Very small recovery: Gray-brown dolomite, few specks of gray chert, marcasite 8, blende 5.
130	135	Very small recovery: Coarse cuts brown dolomite, marcasite 4, blende 1.
135	140	Lost cuttings.
140	142	Gray-brown dolomite, gray chert 97-3, buff dolomite (reamings) 40, marcasite 15, blende 10
142	145	Gray-brown coarse green vuggy dolomite, gray & tan chert 97-3, trace of gray clay, marcasite 10, blende 1.
145	147	Gray-brown dolomite, gray-brown chert and marcasite-speckled chert 80-20, marcasite 20, blende 8.

(Continued on Next Page)

DRILL HOLE NO. 33 (con't.)

Property Name: FRANCIS H. CALVERT.

DEPTH FROM	DEPTH TO	DESCRIPTION
147	150	Brown dolomite, marcasite-speckled chert and gray-brown chert 75-25, marcasite 14, blende 4.
150	152½	Brown dolomite, trace gray-brown chert, marcasite 25, blende 8
152½	155	Gray dolomite, marcasite 10, blende 1/2. GRAY - 152.5'
155	157½	Gray marcasite-speckled dolomite, marcasite 18, blende 7.
157½	160	Gray coarse-grained dolomite, marcasite 20, blende 9
160	162½	Small recovery: Gray coarse-grained dolomite, marcasite 25, blende 25
162½	165	Small recovery: Marcasite, blende, gray dolomite 78-20-2.
165	167½	Good recovery: Gray marcasite-speckled dolomite, marcasite 70, blende 10, trace gray clay. BLUE - 165' (?)
167½	170	Small recovery: Gray marcasite-speckled dolomite, gray clay, marcasite 55, blende 15
170	172½	Fair recovery: Gray marcasite-speckled dolomite, brown dolomitic limestone 80-20, some gray clay, marcasite 30, blende 12. OIL ROCK - 172'
172½	175	Brown dolomitic limestone, numerous fossils, brown shale 5, marcasite 25, blende 10
175	177½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 60, blende 10
177½	180	Green clay, considerable ravelling from Oil Rock, marcasite 50, blende 10, dark brown dolomitic limestone. CLAY - 177'
180	182½	Gray dolomitic limestone, trace dark brown dolomite, marcasite 30, blende 15. CLAY - 179.8'
182½	185	Gray dolomitic limestone, marcasite 40, blende 15 McGREGOR - 180.1'

T.D.: 134 feet
Water: 15 feet
Assays: Yes

(Mineralization below the Claybed is known to be ravelling from the Blue Horizon and probably most of it from 170 to 185 feet is ravellings.)

Drillers Remarks: 8½" hole 0 to 25 feet
6¾" hole 25 to 140 feet
4 7/8" hole 140 to 185 feet.
Small casing set to 151 feet. An opening at 120½ to 122 & 123½ to 124½ feet. Hole caving badly from 177½ feet to bottom.

Location of Hole: North 45° East 63 feet from Drill Hole # 12.

(CONTINUED ON NEXT PAGE)

Geologist: H. . Davis.

DIA. HOLE No. 33 (Con't.)

PROPERTY NAME: FRANCIS M. CALVERT.

A S S A Y S

		Blende	FeS2	Galena
100	105	0.75	7.27	Trace
105	110	0.60	4.28	"
115	120	28.90	14.33	"
120	125	15.20	11.55	"
125	127½	19.20	7.70	0.12
127½	130	3.55	6.20	Trace
130	135	1.80	3.21	Trace
140	142	12.80	11.98	"
142	145	0.60	20.54	"
145	147½	5.50	24.61	0.12
147½	150	2.70	24.39	Trace
150	152½	3.85	25.68	"
152	155	1.90	15.85	"
155	157½	9.55	34.88	0.13
157½	160	5.95	31.24	Trace
160	162½	28.40	40.66	0.13
162½	165	13.85	35.97	0.13
165	167½	8.65	64.41	0.12
167½	170	7.75	71.69	0.12
170	172½	8.80	29.90	0.12
172½	175	9.85	28.69	0.13
175	177½	7.00	50.93	0.13
177½	180	6.40	39.59	0.16
180	182½	17.90	43.87	0.15
182½	185	15.95	39.80	0.12
	115			
	70			

Geologist: R. P. Davis.

DRILL RECORD
THE [illegible] COMPANY

DRILL HOLE NO. 34

Property Name: FRANCIS M. CALVERT
Began: July 14,1953. Finished: July 17,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown.

COLLAR ELEVATION: 975.90'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	10	Brown-buff clay
10	15	Buff dolomite
15	25	Buff dolomite
25	40	Buff dolomite
40	60	Buff dolomite
60	75	Dark buff dolomite
75	85	Dark buff dolomite — DRAB - 87.5'
85	90	Buff & dark buff dolomite, brown dolomite, gray-brown chert 80-17-3, few specks of marcasite.
90	100	Brown & buffish-brown dolomite, gray-brown chert 92-8, marcasite 1/10
100	110	Buffish-brown dolomite, brown & gray-brown chert 94-6, trace of marcasite
110	120	Pale buffish-brown dolomite, gray and white chert 95-5, trace of marcasite
120	130	Brown-gray dolomite, white chert 93-7, marcasite 2/10
130	140	Gray-brown dolomite, gray chert 98-2, marcasite 2/10
140	145	Small recovery; Brown dolomite, gray chert 96-4, few coarse cuts of buff dolomite, dark buff clay 1, marcasite 8/10
145	150	Brown-buff dolomite, tan chert 97-3, trace dark gray clay, marcasite 1
150	155	Brown dolomite, tan & gray-brown chert 94-6, marcasite 7
155	160	Coarse cuts: Brown dolomite, few specks chert, marcasite 2
160	165	Brown dolomite, tan chert 96-4, gray clay 1, marcasite 5.
165	170	Coarse cuts: Brown dolomite, gray-brown chert 94-6, marcasite 3
170	175	Brown dolomite, gray-brown chert 92-8, marcasite 5.
175	180	Brown dolomite, gray-brown chert 93-7, trace brown chert, trace gray clay, marcasite 6
180	185	Brown dolomite, gray-brown chert 98-2, marcasite 8.
185	190	Gray dolomite, brown dolomite 95-5, marcasite 7. — GRAY - 185'
190	192½	Lost cuttings - no recovery
192½	195	Lost cuttings - no recovery
195	197½	Gray dolomite, marcasite 12
197½	200	Gray dolomite, marcasite 9 — BLUE - 200'
200	202½	Gray dark-speckled dolomite, revelled from 'Drab' 10%, marcasite 6
202½	205	Gray dark-speckled dolomite, trace gray clay, revelled from 'Drab' 45, marcasite 4.

(Continued on Next Page)

DRILL HOLE NO. 34 (Con't)

Property Name: FRANCIS M. CALVERT.

DEPTH FROM	TO	DESCRIPTION
		OIL ROCK - 205'
205	207½	Tan fossiliferous limestone, gray dark-speckled dolomite 98-2, marcasite 1, a speck of blende
207½	210	Light brown fossiliferous dolomitic limestone, marcasite 6/10, trace of blende
210	212½	Tan fossiliferous limestone, marcasite 1½ CLAYRED - 214'
212½	215	Tan and light gray fossiliferous limestone, green clay 60-40, marcasite 1½, few phosphate nodules. GLASS -217.0 (per driller)
215	217½	Dark brown dolomite, chocolate brown shale 90-10, few specks gray dolomitic limestone, marcasite ½, (measured depth of hole with steel tape at this point - measured 219.0 feet)
217½	218½	Gray dolomitic limestone, Glassrock ravelling 8%, marcasite 8/10 McGREGOR - 219.0' per measure

T.D.: 220 feet
Water:
Assays: No

6½" hole to 172 feet
4 7/8" hole to 172 to 220 feet
Set 172 feet of small casing
6" crack at 142 feet
Broken ground and loose 140 to 195 feet.
Hit a crack at 195 feet.

Location of Hole: 70 feet north from Drill hole # 30.

Geologist: H. . Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 35

Property Name: FRANCIS M. CALVERT
Began: 7-17-'53. Finished:
Drill Owner: J. F.Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 966.69'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	3½	Soil
3½	10	Buff dolomite (coarse cuts)
10	20	Buff dolomite (rather coarse cuts)
20	35	Buff dolomite
35	45	Buff dolomite
45	55	Rather dark buff dolomite
55	65	Rather dark buff dolomite (fine cuts)
65	70	Dark buff dolomite, trace of limonite
70	75	Dark buff dolomite, gray dolomite 50-50, trace of white chert, trace of limonite, few specks of marcasite
75	80	Gray dolomite, white chert 96-4, marcasite 1/10 DRAB - 75'
80	90	Pale brown-gray dolomite, white & gray chert 92-8, marcasite 4/10
90	100	Pale brown-gray dolomite, light gray and white chert 92-8, marcasite 3/10
100	110	Pale brown-gray dolomite, light gray and white chert 91-9, marcasite 1/10, speck of blende
110	120	Pale brown-gray dolomite, light gray & white chert 93-7, marcasite 1/10, few specks of blende
120	130	Brown dolomite, gray and marcasite-speckled chert 97-3, marcasite 2/10, few specks of blende
130	140	Brown dolomite, gray-brown and marcasite-speckled chert 95-5, marcasite 1/2, trace of blende
140	145	Brown dolomite, tan chert 95-5, marcasite 1, blende 2/10
145	150	Brown marcasite-speckled dolomite, a speck of tan chert, marcasite 12, blende 3/10
150	155	Brown dolomite, marcasite-speckled chert 94-6, marcasite 8, blende 1/10
155	160	Brown dolomite, marcasite-speckled chert and tan chert 91-9, marcasite 7, blende 1/2
160	165	Brown dolomite, marcasite-speckled chert, gray-brown chert 88-12, marcasite 7, blende 2/10
165	168	Brown dolomite, marcasite-speckled chert 91-9, marcasite 6, trace of blende
168	170	Brown dolomite, marcasite-speckled & gray-brown chert 94-6, marcasite 5, trace of blende
170	175	Brown dolomite, gray-brown chert 98-2, marcasite 35, blende 12
175	177½	Gray dolomite, brown dolomite 80-20, marcasite 20, blende 4.
177½	180	Gray dolomite, marcasite 10, blende 1. GRAY - 175.5'
180	182½	Gray dolomite, gray clay 99-1, marcasite 5, blende 7/10

(Continued on Next Page)

 Geologist: H. [illegible] Davis

DRILL HOLE NO. 35 (Con't.)

Property Name: FRANCIS M. CALVERT

DEPTH FROM	TO	DESCRIPTION
182½	185	Brown-gray dolomite, marcasite 4, blende 1/2
185	187½	Gray-brown dolomite, marcasite 3, blende 3/10
187½	190	Gray-brown marcasite-speckled dolomite, marcasite 2, blende 1/10 BLUE - 190.5'
190	192½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, marcasite 4, few specks of blende
192½	195	Gray dark-speckled dolomite, marcasite 4, blende 1/10
195	197½	Dark brown shaly dolomite, light brown limestone 97-3, few specks dark gray dolomite, marcasite 2, blende 2/10 OIL ROCK - 195.0'
197½	200	Light brown limestone, green clay, dark brown dolomite 70-20-10, marcasite 3, blende 1/10, few specks of phosphorous. CLAY BED - 199.5'
200	202½	Dark brown limestone, green clay, chocolate brown shale 92-5-3, marcasite 3, blende 2/10 GLASS ROCK - 202'
202½	205	Brown limestone, gray dolomitic limestone 60-40, chocolate brown shale 1, marcasite 1, blende 2/10, a speck of galena. McGREGOR - 204'

T.D.#: 205.2 feet
Water 44 feet. Broken ground 145 - 170 feet.
Location of Hole: N. 45° W 110 feet from Drill Hole #29.

Assay	ZnS	FeS$_2$	PbS
145 - 150	0.61	18.10	none
170 - 175	10.20	21.70	"
175 - 177½	2.62	13.76	"
177½ - 180	1.07	10.21	"

Geologist: R. T. Lewis

DRILL RECORD
OHIO CONSOLIDATED COMPANY

DRILL HOLE NO. 36

Property Name: [illegible] R. GALBERT
Began: 7-22-'53 Finished:
Drill Owner: J. P. Robinson
Drill Runner: L. J. Brown

MEAN ELEVATION: 963.06'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	4	Soil
4	10	Coarse cuts of buff dolomite
10	25	Coarse cuts of buff dolomite
25	30	Buff dolomite, trace of limonite
30	35	Coarse cuts: buff dolomite, limonite 5
35	40	Coarse cuts: dark buff dolomite, limonite 4
40	45	Coarse cuts: dark buff dolomite, limonite 1
45	50	Coarse cuts: dark buff dolomite, limonite 1/2
50	55	Rather coarse cuts: dark buff dolomite, limonite 2/10
55	60	Rather coarse cuts: dark buff dolomite, limonite 1, few specks of marcasite
60	65	Buff dolomite, brown dolomite 85-15, limonite and marcasite 2/10
65	70	Buff dolomite, brown dolomite 98-2, limonite 1/10, few specks of marcasite
70	75	Brown dolomite, buff dolomite 60-40, few specks of brown calcite, marcasite and limonite 4/10
75	80	Brown dolomite, gray & marcasite-speckled chert 93-8, marcasite 1/2 SHALE - 78'
80	90	Brown dolomite, brown & marcasite-speckled chert 93-7, marcasite 4
90	100	Pale brown-gray dolomite, gray chert and white chert 97-3, buff dolomite ravelling 15
100	110	Light gray dolomite, gray & white chert 95-5, marcasite 2, few specks of blende
110	120	Pale brown-gray dolomite, gray & white chert 88-12, few specks of blende
120	130	Pale brown-gray dolomite, gray & white chert 96-4, marcasite 5, trace of blende
130	140	Pale brown-gray dolomite, gray and white chert 96-4, marcasite 4, trace of blende
140	150	Pale brown-gray dolomite, gray & white chert 98-2, marcasite 4, few specks of blende
150	155	Pale brown-gray dolomite, gray & white chert 99-1, trace of dark gray clay, marcasite 7, blende 1
155	160	Pale brown-gray dolomite, gray & white chert 93-7, marcasite 6, blende 2/10
160	165	Pale brown-gray dolomite, gray & white chert 90-10, marcasite 8, few specks of blende
165	170	Light brown dolomite, white chert 99-1, marcasite 3
170	172½	Pale gray-brown dolomite, gray & white chert 97-3, marcasite 1
172½	175	Pale brown-gray dolomite, white chert 99-1, few specks gray dolomite, a speck of light green shale, marcasite 1/2, trace of blende SHALE - 175'

(Continued on next page)

Page # 2. Geologist: E. H. Davis

DRILL HOLE No. 36 (Con'd)

Property Name: Phillip E. Corbett

Depth		Descriptions
175	177½	Lost cuts
177½	180	Lost cuts
180	182½	Small recovery. Gray dolomite, marcasite 20, blende 15
182½	185	Very small recovery: Light gray dolomite, marcasite 20, blende 15 (sample contaminated with surface clay)
185	187½	Extra coarse cuts: Light gray dolomite, marcasite 3, blende 1 (full recovery)(sample contaminated with surface clay)
187½	190	Light gray dolomite, marcasite 12, blende 8
190	192½	Coarse cuts: gray dolomite, gray clay 1, marcasite 16, blende 6.(sample contaminated with surface clay) WATER - 190'
192½	195	Gray dolomite cavelling 80, gray clay 20, marcasite 12, blende 5
195	197½	Gray dolomite cavelling 80, gray clay and brown clay 80, marcasite 12, blende 5 OIL SHOW - 197.5'
197½	200	Gray dolomite cavelling 95, brown limestone 5, marcasite 18, blende 7
200	202½	Mostly gray dolomite cavellings, green clay, brown limestone 60-40, marcasite 12, blende 6 GAS - 201'
202½	205	Gray dolomite cavelling 60, dark brown sandy dolomite 40, some gray clay, marcasite 5, blende 4 GAS - 203'
205	207½	Gray dolomitic limestone, considerable gray dolomite cavelling (coarse cuts), marcasite 30, blende 12 BOTTOM - 205'

D.D.H: 207.5 feet- with steel tape
Water: 190 feet
Location of Hole: 65 feet north and 57 feet west from Drill Hole # 35.

Driller's Remarks: Lost most of cuttings: 105 to 120 feet; broken ground and lost most of cuts from 125 to 175 feet; loose broken ground, lost most cuts from 175 to 187½ feet; soft ground 192½ to 197½ feet; hard ground 197½ to 200 feet; soft ground 200 to 205 feet.

Geologist's Remarks: I question whether there is any mineralization in place below 175 feet for there was "gray" cavelling all the way to the bottom of hole.

E. H. Davis.

Assay	ZnS	SiO_2	PbS
180-182½	7.65	13.43	none
182-187½	1.35	0.45	"
187½-190	13.57	14.72	"
190-192½	7.12	23.00	"
192½-195	4.36	16.00	"
195-197½	0.37	7.00	"
197-200	7.72	17.31	"
200-202½	4.12	10.75	"
202½-205	3.07	4.35	"
205-207½	7.05	13.54	"

22½' 3.80 gm
da - 2½ - Ta + 8½

Geologist: H. E. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 37

Property Name: FRANCIS M. CALVERT
Began: 7-27-'53. Finished: 7-29-'53.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown.

COLLAR ELEVATION: 975.05'

DEPTH FROM	DEPTH TO	DESCRIPTION
0	5	Soil
5	20	Buff sandy clay, trace limonite
20	35	Coarse cuts: Dark buff dolomite, trace limonite, speck of blende
35	40	Dark buff dolomite, trace limonite
40	45	Buff dolomite, limonite 1/2
45	55	Dark buff dolomite, limonite 5
55	65	Dark buff dolomite, limonite 4
65	70	Dark buff dolomite, limonite 3
70	75	Dark buff to buffish-brown dolomite, limonite 2
75	80	Buffish-brown dolomite, dark buff dolomite 90-10, limonite 4
80	85	Brown dolomite, limonite 3, few specks of marcasite, a speck of gray-brown chert DRAB - 85'
85	90	Gray-brown dolomite, gray and marcasite-speckled chert 94-6, dark brown shale 4, ochre clay 1, marcasite and limonite 3
90	95	Brown dolomite, marcasite-speckled chert and gray-brown chert 93-7, marcasite 4, trace of limonite
95	100	Brown dolomite, gray chert slightly marcasite-speckled and tan chert 91-9, marcasite 2,
100	110	Brown dolomite, marcasite-speckled chert 90-10, marcasite 10
110	115	Brown-gray dolomite, gray & white chert 98-2, marcasite 4
115	120	Brown-gray dolomite, white chert 94-6, marcasite 7
120	130	Brown-gray dolomite, light gray & white chert 92-8, marcasite 4, blende 2/10
130	140	Gray-brown dolomite, gray & marcasite-speckled chert 93-7, marcasite 6, blende 2/10
140	150	Brown dolomite, gray-brown chert 95-5, marcasite 3, trace of blende
150	155	Brown dolomite, few specks gray chert, marcasite 2, few specks of blende
155	160	Brown dolomite, gray chert 97-3, marcasite 5, blende 3/10
160	165	Brown dolomite, gray chert 99-1, marcasite 9, blende 3
165	167½	Brown dolomite, trace of calcite, marcasite 6, blende 1
167½	170	Brown dolomite, trace calcite, few specks of marcasite-speckled chert, marcasite 5, blende 2/10
170	175	Brown dolomite, gray-brown and marcasite-speckled chert 93-7, marcasite 7, blende 3/10
175	180	Brown dolomite, gray-brown and tan chert 91-9, marcasite 3, trace of blende
180	182½	Brown dolomite, gray-brown chert 97-3, marcasite 4, blende 7/10
182½	185	Brown dolomite, gray-brown chert 99-1, marcasite 3, blende 2/10
185	187½	Gray dolomite, brown dolomite 80-20, marcasite 2, blende 1/10 GRAY - 185.5'
187½	190	Brown-gray marcasite-speckled dolomite, trace of brown shale, marcasite 5, blende 1/2

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Geologist: H. . Davis

DRILL HOLE NO. 37 (Con't.)

Property Name: FRANCIS M. CALVERT.

DEPTH FROM	DEPTH TO	DESCRIPTION
190	192½	Gray marcasite-speckled dolomite, gray clay, dark brown shale 95-5-1, marcasite 4, blende 2/10
192½	195	Brown-gray dolomite, few specks dark brown shale, marcasite 3, blende 1/10
195	197½	Brown-gray dolomite, marcasite 7, blende 8/10
197½	200	Brown-gray dolomite, marcasite 10, blende 2 BLUE - 200.5'
200	202½	Gray dark-speckled marcasite-speckled dolomite, brown-gray dolomite 80-20, marcasite 12, blende 1½
202½	205	Gray dark-speckled marcasite-speckled dolomite, brown-gray dolomite, marcasite 9, blende 3/10 OIL ROCK - 207.5'
205	207½	Gray dark-speckled marcasite-speckled dolomite, gray clay, trace of brown dolomitic limestone, marcasite 16, blende 5
207½	210	Light brown fossiliferous limestone, dark brown shale 90-10, marcasite 8, blende 2. CLAY - 212'
210	212½	Brown limestone and dark brown shaly limestone, green clay and shale 80-20, marcasite 13, blende 5.
212½	215	Dark brown dolomite, green clay 80-20, marcasite 10, blende 3 GLASS - 214.5'*
215	218½	Light gray fine-grained dolomitic limestone, brown dolomitic limestone 70-30, marcasite 2, blende 6/10 McGREGOR - 216.0'

T.D.M: 218.5 feet
Water: 52½ feet
Location of Drill Hole: 200feet west from DrillHole # 36
* Glassrock top as indicated by the driller.

Assay	ZnS	FeS₂	PbS
160 - 165	2.62	5.80	none
165 - 167½	1.80	5.05	"
167½ - 170	0.82	4.40	"
205 - 207½	6.60	21.39	"
207½ - 210	2.62	10.10	"
210 - 212½	1.96	12.90	"
212½ - 215	2.02	15.70	"

U.S.G.S - Denver

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 38

Property Name: FRANCIS M. CALVERT
Began: 8-1-53 Finished: 8-5-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Collar Elevation 979.27'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buff dolomite, few specks limonite & marcasite
10	30	Buff dolomite
30	60	Buff dolomite
60	70	Buff dolomite, few specks limonite
70	75	Dark buff dolomite, few specks limonite
75	80	Buff & brown dolomite, marcasite 4/10
80	85	Fine cuttings: Buff dolomite, marcasite 5
85	90	Brown dolomite, dark brown chert 98-2, marcasite 2 DRAB - 87½
90	100	Pale brown dolomite, white chert 96-4, marcasite 5
100	110	Brown dolomite, brown, gray & marcasite-speckled chert 93-7, marcasite 5
110	120	Brown dolomite, gray chert 96-4, marcasite 2
120	125	Pale brown-gray dolomite, white chert 92-8, marcasite 1
125	135	Pale brown-gray dolomite, light gray & white chert 94-6, marcasite 6/10
135	145	Pale brown dolomite, gray & white chert 91-9, marcasite 3
145	150	Brown dolomite, gray chert 94-6, marcasite 3
150	160	Brown dolomite, tan chert 95-5, marcasite 3/10
160	165	Brown dolomite, trace tan chert, gray-brown clay 2, marcasite 4, few specks blende
165	170	Brown dolomite, tan chert ½, marcasite 7, few specks blende
170	175	Dark brown dolomite, gray-brown & marcasite-speckled chert 90-10, marcasite 7
175	180	Dark brown dolomite, gray-brown & marcasite-speckled 80-20, gray-brown clay 1, marcasite 5
180	185	Dark brown dolomite, gray-brown & marcasite-speckled 97-3, gray-brown clay 1, marcasite 4
185	190	Gray dolomite, brown dolomite 95-5, few specks dark gray clay, marcasite 1 GRAY - 185.2
190	195	Brown-gray dolomite, marcasite 2, trace gray & dark gray clay
195	197½	Brown-gray dolomite, marcasite 2
197½	200	Gray-brown dolomite, marcasite 1½
200	202½	Gray dark-speckled dolomite, gray-brown dolomite 90-10, marcasite ½, specks blende BLUE - 200.2
202½	205	Gray dark-speckled dolomite, marcasite 1, few specks blende
205	207½	Gray dark-speckled dolomite, gray clay 95-5, marcasite 3, blende 1
207½	210	Brown fossiliferous dolomite & brown shale, marcasite 10, blende 5 OILROCK - 207.5
210	212½	Brown fossiliferous dolomite & brown shale, marcasite 35, blende 12
212½	215	Brown & brown-gray fossiliferous dolomitic limestone, green clay 80-20, marcasite 20, blende 7 CLAYBED - 214.5

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Geologist: Harold W. Davis

HOLE NO. 38
Continued

Property Name: FRANCIS M. CALVERT

From	To	
215	217½	Green clay & brown-gray fossiliferous dolomitic limestone, marcasite 10, blende 5 GLASS - 217.5
217½	220	Dark brown dolomite, trace calcite, marcasite 50, blende 1 (?)
220	222½	Gray dolomitic limestone, trace dark brown dolomite, marcasite 10, blende 2 McGREGOR - 220.0
222½	225	Gray dolomitic limestone, marcasite 7, blende 1

Total depth measured 227'
Water

Location of Hole: 75' South from #37

Assay	Zns.	Feds	Pbs
205 - 207½	4.08	15.55	none
207½ - 210	2.07	13.76	"
210 - 212½	3.37	41.39	0.35
212½ - 215	5.10	30.96	Trace
215 - 217½	1.67	24.83	None
217½ - 220	0.45	54.54	"
220 - 222½	0.27	19.24	"

Geologist: Harold A. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 39

Property Name: FRANCIS M. CALVERT
Began: 8-5-53 Finished: 8-7-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 986.53'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	20	Buff dolomite, few specks marcasite
20	50	Buff dolomite
50	70	Buff dolomite
70	80	Dark buff dolomite
80	85	Dark buff calcareous dolomite
85	90	Brown dolomite, buff dolomite 90-10, thin trace marcasite
90	95	Brown dolomite, buff dolomite 95-5, brown chert 1, marcasite 2/10 DRAB - 94
95	100	Buffish-brown dolomite, light gray marcasite-speckled chert 95-5, trace red-brown clay, marcasite 2
100	110	Brown dolomite, tan, marcasite-speckled & brown chert 93-7, marcasite 2
110	120	Brown dolomite, brown & gray-brown chert 97-3, marcasite 2
120	130	Brown dolomite, white & gray-brown chert 96-4, marcasite 1
130	140	Brown-gray dolomite, light gray chert 92-8, marcasite 7/10, a speck blende
140	150	Brown dolomite, gray & marcasite-speckled chert 85-15, marcasite 4
150	155	Brown dolomite, gray & marcasite-speckled chert 94-6, marcasite 5
155	160	Brown dolomite, marcasite-speckled chert 96-4, marcasite 9, trace blende
160	165	Brown dolomite, few specks marcasite-speckled chert, trace dark gray clay, marcasite 20, few specks blende
165	170	Brown dolomite, tan & gray-brown chert 97-3, marcasite 8, few specks blende
170	175	Dark brown dolomite, no chert, marcasite 5
175	180	Dark brown dolomite, tan & marcasite-speckled chert 91-9, marcasite 4, a speck blende
180	185	Dark brown dolomite, marcasite-speckled & tan chert 92-8, marcasite 6, a speck blende
185	190	Dark brown dolomite, marcasite-speckled chert 93-7, trace dark gray clay, marcasite 8
190	195	Dark brown dolomite, trace tan & marcasite-speckled chert, marcasite 12
195	197½	Dark brown dolomite, gray dolomite 95-5, marcasite 4, a speck blende GRAY - 197.4
197½	200	Gray & brown-gray dolomite, marcasite 5, blende 4/10
200	202½	Brown-gray dolomite, marcasite 3, blende 2/10
202½	205	Gray marcasite-speckled dolomite, trace light gray clay, marcasite 7, a speck blende
205	207½	Gray & brown-gray dolomite, marcasite 5, blende 4/10
207½	210	Brown-gray dolomite, marcasite 10, blende 3
210	212½	Gray dark-speckled dolomite & gray clay, brown-gray dolomite 70-30, marcasite 9, blende 2

Geologist: Harold W. Davis

HOLE NO. 39
Continued

Property Name: FRANCIS M. CALVERT

From	To	
212½	215	Gray dark-speckled dolomite, marcasite 3, blende ½
215	217½	Gray dark-speckled dolomite, few specks brown shale & brown dolomitic limestone, gray clay 1, marcasite 2, blende 4/10 OILROCK - 217.5
217½	220	Brown fossiliferous dolomitic limestone, brown shale 95-5, marcasite 2, blende ½, few specks galena
220	222½	Brown fossiliferous dolomitic limestone & dark brown shale, gray clay 5, marcasite 3, blende 8/10, few specks galena CLAY - 222.4
222½	225	Gray clay, brown & gray brown fossiliferous limestone, marcasite 2, blende ½, specks galena
225	227½	Dark brown sugary dolomite & chocolate brown shale, gray dolomitic limestone, gray clay 40-40-20, marcasite 1, blende 3/10 GLASS - 225.5
227½	230	Gray marcasite-speckled dolomitic limestone, marcasite 3, blende ½ McGREGOR - 226.5

Total depth measured 229.5
Water at 64'

Location of Hole: 320' West from #37

Assay	Au	Ag_2	Pb
160 - 165	None	13.00	None
197½ - 200	0.30	4.62	"
207½ - 210	3.15	2.71	"
210 - 212½	2.70	11.28	"
212½ - 215	1.12	9.14	"

Geologist: H. W. Davis

Drill Hole
The [illegible] Company

HOLE NO. 40

Property Name: FRANCIS M. CALVERT
Began: 8-8-53 Finished: 8-11-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Collar Elev. 956.05'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	15	Brown clay
15	20	Brown clay, buff dolomite, phosphate, red chert 50-35-10-5
20	25	Dark buff dolomite (coarse cuttings), limonite 1, trace red & buff chert
25	30	Dark buff dolomite, few specks limonite
30	40	Dark buff limonite-speckled dolomite
40	50	Buff dolomite
50	60	Buff limonite-speckled dolomite
60	70	Rather dark buff limonite-speckled dolomite
70	75	Fine cuttings: Rather dark buff dolomite, specks calcite
75	80	Buff dolomite, brown dolomite 95-5, few specks limonite
80	85	Buff dolomite, brown dolomite, brown chert 90-6-4 DRAB - 82.5
85	90	Brown-buff dolomite, brown chert 90-10, trace limonite, a speck galena
90	95	Brown dolomite & buff dolomite, gray marcasite-speckled chert & brown chert 88-12, marcasite 5, few specks galena
95	100	Brown dolomite, gray-brown & marcasite-speckled chert 95-5, marcasite 1
100	105	Brown dolomite, gray marcasite-speckled chert 80-20, marcasite 3
105	110	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 7
110	115	Buff dolomite, gray & brown chert 60-40, marcasite 2
115	120	Fairly coarse cuttings: Gray-brown dolomite, gray chert 97-3, marcasite 1, specks galena
120	125	Brown-buff dolomite, gray chert 96-4, marcasite 4/10, specks galena
125	135	Brown-buff dolomite, brown & gray chert 94-6, marcasite 2/10
135	145	Brown-buff dolomite, gray-brown chert 98-2, marcasite 4/10
145	155	Buff dolomite, marcasite-speckled chert 95-5, marcasite 3/10
155	160	Buffish-brown dolomite, marcasite-speckled chert 92-8, marcasite 8
160	170	Dark brown dolomite, gray-brown & marcasite-speckled chert 92-8, marcasite 3
170	175	Gray & brown-gray dolomite, trace brown dolomite, marcasite 7/10 GRAY - 170
175	180	Gray dolomite, marcasite 6/10
180	182½	Brown-gray dolomite, marcasite 1/2
182½	185	Brown-gray dolomite, marcasite 4/10
185	187½	Brown-gray dolomite, gray dark-speckled dolomite 98-2, marcasite 4/10
187½	190	Gray dark-speckled dolomite, marcasite 2/10, specks galena BLUE - 187½

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
190	192½	Gray dark-speckled dolomite, marcasite 2/10
192½	195	Gray dark-speckled dolomite, brown dolomite (coarse cuttings) 70-30, marcasite 1/10 OIL - 194.2
195	197½	Brown fossiliferous limestone & brown shaly limestone, (coarse cuttings), marcasite 2/10
197½	200	Dark tan limestone & brown shaly limestone, marcasite 2/10, a speck blende
200	202½	Brown limestone & light gray dark-speckled fossiliferous limestone, green clay 80-20, marcasite 3/10, blende 2/10 CLAYBED - 202.0
202½	205	Gray clay, brown limestone & gray fossiliferous limestone, marcasite ½, blende 3/10 GLASS - 205.0
205	207½	Dark brown limestone, chocolate brown shale 95-5 (coarse cuttings), marcasite 2/10, blende 1/10
207½	210	Gray dolomitic limestone, brown dolomitic limestone & chocolate brown shale 80-20, marcasite 2/10, blende 1/10 McGREGOR - 208

Total depth measured 209.5 with steel tape.
Water
No assays

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 475' North & 97' East from Southwest corner of Northwest of Southeast

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 41

Property Name: FRANCIS M. CALVERT
Began: 8-11-53 Finished: 8-14-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 982.35'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buffish-brown clay
10	15	Buffish-brown clay, buff dolomite 90-10, trace red & dark buff chert, limonite 2/10
15	20	Extra coarse cuttings: Buff dolomite, few cuttings red chert, few coarse chips limonite
20	25	Coarse cuttings: Buff dolomite, some clay sloughing, few red chert ravellings, few coarse chips limonite
25	30	Buff limonite-speckled dolomite
30	40	Buff & limonite-speckled dolomite
40	50	Buff & limonite-speckled dolomite
50	60	Buff dolomite
60	70	Buff dolomite & dark buff limonite-speckled dolomite
70	75	Fine cuttings: dark buff calcareous dolomite
75	80	Fine cuttings: dark buff calcareous dolomite, trace clay & red chert ravellings, few specks limonite (ravelling?)
80	85	Dark buff dolomite & brown dolomite 50-50, a speck marcasite
85	90	Buffish-brown dolomite, gray chert 93-7, few specks marcasite DRAB - 87½
90	95	Buffish-brown dolomite, gray chert 93-7, marcasite 2/10
95	100	Buffish-brown dolomite, gray chert 92-8, marcasite 2
100	105	Dark brown dolomite, marcasite-speckled chert, brown & tan chert 93-7, marcasite 1
105	110	Dark brown dolomite, brown & tan chert 95-5, marcasite 6/10
110	120	Pale brown dolomite, light gray & white chert 90-10, marcasite 2, trace blende
120	130	Smoky gray dolomite, gray & white chert 80-20, marcasite 7/10, trace blende
130	140	Brown dolomite, gray chert 94-6, marcasite 3
140	150	Dark brown dolomite, gray-brown & white chert 97-3, marcasite 2
150	160	Brown dolomite, brown-gray chert 95-5, marcasite 3, blende 2/10
160	165	Brown dolomite, few specks gray chert, marcasite 1, trace blende
165	175	Dark brown dolomite, marcasite-speckled 93-7, marcasite 5
175	180	Dark brown dolomite, marcasite-speckled, tan & brown chert 82-18, marcasite 9
180	185	Dark brown dolomite, gray-brown & tan chert 96-4, marcasite 2
185	190	Dark brown dolomite, marcasite-speckled (ravelling?) 85-15, marcasite 8
190	192½	Brown marcasite-speckled dolomite, trace marcasite-speckled chert & brown-gray chert, marcasite 20
192½	195	Gray dolomite, brown dolomite 80-20, few specks chert ravellings, marcasite 12
195	197½	Gray dolomite, marcasite 10 (Small recovery) GRAY - 193

Property Name: FRANCIS M. CALVERT

From	To	
197½	200	Gray dolomite, marcasite 25 (Small recovery)
200	202½	Gray dolomite, buff dolomite & clay ravellings 5, marcasite 13 (Small recovery)
202½	205	Very small recovery, Some coarse cuttings: Gray dolomite, black clay 3, marcasite 8
205	207½	Gray dolomite, trace black clay, some buffish brown clay sloughing, marcasite 20, blende 1 (?)
207½	210	Gray dolomite, considerable buffish brown clay, marcasite 25, blende 1 (?)
210	212½	Gray dark-speckled dolomite, little buffish brown clay, marcasite 30, specks blende
212½	215	Gray dark-speckled dolomite, gray clay 1, marcasite 2, specks blende
215	217½	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 80-20, marcasite 12 OIL - 217.0
217½	200	Brown fossiliferous dolomitic limestone, green clay 60-40, marcasite 8, specks blende CLAY - 219.0
220	222½	Gray clay, gray fossiliferous limestone 90-10, marcasite 5, few specks phosphate, a speck blende
222½	225	Gray dolomitic limestone (coarse cuttings), brown dolomite, chocolate brown shale 80-19-1, considerable buff dolomite ravellings, marcasite 6 GLASS - 222½
225	227	Gray dolomitic limestone, buff dolomitic ravellings 5, marcasite 5, a speck blende McGREGOR - 223

Total depth measured 227.0 with steel tape.
Water 59'

Location of Hole: 50' North from Drill Hole #39

A S S A Y S

	ZnS	FeS_2	PbS
190 - 192½	0.07	20.42	None
192½ - 195	0.14	12.68	"
195 - 197½	0.13	8.38	"
197½ - 200	None	16.55	"
200 - 202½	"	9.46	"
202½ - 205	0.14	6.77	"
205 - 207½	0.67	12.47	"
207½ - 210	0.37	18.27	"
210 - 212½	0.13	40.31	"
212½ - 215	0.07	32.90	"

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 42

Property Name: FRANCIS M. CALVERT
Began: 8-14-53 Finished: 8-17-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 989.81'

DEPTH From	To	DESCRIPTION
0	7	Reddish brown clay, few cuttings buff dolomite
7	10	Coarse cuttings buff dolomite, gray dolomite 1, specks marcasite
10	20	Coarse cuttings buff dolomite
20	35	Buff dolomite
35	50	Buff dolomite, trace limonite
50	60	Buff dolomite, specks limonite
60	70	Buff dolomite
70	80	Buff dolomite
80	85	Dark buff dolomite (slightly calcareous)
85	90	Dark buff dolomite, few specks calcite
90	95	Dark buff dolomite, brown-gray dolomite 96-4, a speck marcasite DRAB - 200
95	100	Brown-gray dolomite, buff dolomite 90-10, few specks brown chert, trace marcasite
100	105	Buffish-brown dolomite, gray-brown chert 97-3, marcasite ½
105	110	Buffish-brown dolomite, tan & marcasite-speckled chert 94-6, marcasite 5
110	115	Brown dolomite, tan chert 95-5, marcasite 2
115	120	Brown dolomite, gray-brown chert 96-4, marcasite 2
120	130	Brown dolomite, brown-gray chert 93-7, marcasite 3
130	140	Pale brown-gray dolomite, gray & white chert 85-15, marcasite 1
140	150	Pale brown dolomite, gray & white chert 90-10, marcasite 2, trace blende
150	155	Pale brown-gray dolomite, gray white & marcasite-speckled dolomite 95-5, marcasite 3, blende 1/10
155	160	Brown dolomite, marcasite-speckled chert 94-6, marcasite 5, blende 1
160	165	Brown dolomite, tan & gray-brown chert 95-5, marcasite 9, blende 2
165	170	Brown dolomite, tan & gray chert 94-6, marcasite 6, blende 6/10
170	175	Brown dolomite, tan chert 99-1, marcasite 4, blende 2/10
175	180	Brown dolomite, gray chert 98-2, marcasite 4, trace blende
180	185	Brown dolomite, marcasite-speckled chert 92-8, marcasite 15, few specks blende
185	190	Dark brown dolomite, marcasite-speckled & tan chert 93-7, marcasite 8
190	195	Brown dolomite, gray & marcasite-speckled chert 92-8, marcasite 6
195	200	Dark brown dolomite, gray-brown & marcasite-speckled chert 96-4, marcasite 8 GRAY - 201½
200	202½	Gray dolomite, brown dolomite 60-40, marcasite 7
202½	205	Gray dolomite, marcasite 4
205	207½	Gray dolomite, marcasite 4, trace blende

(Continued on next page)

Property Name: FRANCIS M. CALVERT

From	To	
207½	210	Brown-gray dolomite, specks calcite, marcasite 3, blende 3/10
210	212½	Gray-brown dolomite, little buff dolomitic ravellings, marcasite 3, blende 1/10
212½	215	Gray-brown dolomite, gray clay 90-10, marcasite 2, trace blende BLUE - 214.7
215	217½	Dark gray dark-speckled dolomite, marcasite 6, few specks blende
217½	220	Dark gray dark-speckled dolomite, brown dolomite 95-5, marcasite 5, few specks blende OIL - 219.9
220	222½	Brown & tan limestone, dark brown shaly limestone 50-50, marcasite 3, few specks blende & galena
222½	225	Brown & tan limestone, gray dolomitic limestone 80-20, trace green clay, marcasite 2, trace blende, specks galena CLAYBED - 224.5
225	227½	Dark brown dolomitic limestone & limestone, green clay 80-20, marcasite 3, trace blende GLASS - 225.5
227½	230	Gray dolomitic limestone, dark brown dolomitic limestone 70-30, marcasite 8, calcite 1, few specks blende & galena McGREGOR - 228.2

Total depth measured 230.5' with steel tape.
Water

Land Description:

Location of Hole: 50' South from #39

ASSAYS

	Zn	FeS_2	PbS
155 - 160	None	7.85	None
160 - 165	0.75	7.20	"
165 - 170	0.30	6.02	"
180 - 185	0.[illegible]7	12.04	"

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 43

Property Name: FRANCIS M. CALVERT
Began: 8-17-53 Finished: 8-20-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Collar Elevation 982.22'

DEPTH From	DEPTH To	DESCRIPTION
0	5	Soil
5	10	Buff clay
10	20	Buff clay, buff dolomite 50-50
20	50	Dark buff clay, buff dolomitic ravellings 10
50	55	Dark buff dolomite, limonite 3 (solid @ 52' per driller)
55	65	Dark buff dolomite, limonite 2
65	80	Dark buff dolomite, limonite 3
80	90	Dark buff dolomite, limonite 1, few specks calcite
90	95	Dark buff dolomite, buffish-brown dolomite, brown chert 95-4-1, few specks marcasite, limonite 3/10, few specks marcasite-speckled chert DRAB - 92½
95	100	Dark buff dolomite, buffish-brown marcasite-speckled dolomite, marcasite-speckled chert 60-38-2, limonite 1/10, few specks marcasite
100	105	Brown dolomite to buff dolomite, gray-brown & marcasite-speckled chert 85-15, limonite 1, trace marcasite
105	110	Buff dolomite, brown-gray chert 97-3, dark buff clay & dark gray clay 1, limonite 3/10, trace marcasite (fine cuttings)
110	120	Buffish-brown dolomite, brown-gray & marcasite-speckled chert 94-6, dark buff clay & dark gray clay 2, marcasite 1, limonite ½
120	125	Buffish-brown dolomite, light gray chert 98-2, trace dark buff clay, marcasite 3/10, limonite 1/10
125	130	Pale brown-gray dolomite, light gray & white chert 96-4, marcasite 1/10, limonite 1/10
130	135	Brown dolomite, gray chert 99-1, little buff dolomitic ravellings, trace marcasite & limonite
135	140	Brown dolomite, gray-brown & tan chert 92-8, marcasite 1/10, few specks limonite
140	150	Pale brown dolomite, gray chert 96-4, marcasite 2
150	160	Brown dolomite, tan & gray-brown chert 95-5, marcasite 3
160	170	Brown dolomite, tan chert 99-1, few specks calcite marcasite 2
170	175	Sample contaminated by buff dolomite caving from top of hole. Brown dolomite, gray-brown & tan chert 95-5, marcasite 1
175	180	Brown dolomite, tan, brown & marcasite-speckled chert 93-7, marcasite 2
180	185	Brown dolomite, tan & brown-gray chert 92-8, marcasite 4
185	188	Brown dolomite, brown-gray chert 95-5, marcasite 3
188	190	Brown dolomite, gray dolomite 75-25, marcasite 3, GRAY - 189.5
190	192½	Gray dolomite, some brown dolomitic ravellings marcasite 2
192½	195	Gray dolomite, marcasite 1
195	197½	Gray dolomite, marcasite 7/10

(Continued on next page)

Geologist: R. W. Davis

HOLE NO. 43
Continued

Page 2

Property Name: FRANCIS M. CALVERT

From	To	
197½	200	Brown-gray dolomite, marcasite ½
200	202½	Brown-gray dolomite, few specks calcite, marcasite 7/10
202½	205	Light gray dolomite with few dark specks, brown-gray dolomite 80-20, marcasite 6/10 BLUE - 203.0
205	207½	Gray dark-speckled dolomite, marcasite 4/10
207½	210	Gray dark-speckled dolomite, marcasite 2/10
210	212½	Brown fossiliferous limestone, gray dark-speckled dolomite 60-40, marcasite 2/10, blende 2/10 OILROCK - 211.0
212½	215	Brown fossiliferous limestone, some "Blue" ravellings, marcasite 2/10, trace blende
215	217½	Light brown limestone, dark brown shaly limestone 95-5, marcasite 1/10, few specks blende
217½	220	Green clay, light brown limestone 80-20, marcasite 1/10, blende 2/10, a speck phosphate CLAY - 218
220	222½	Light gray clay, brown limestone, gray shaly limestone, trace green clay, marcasite ½, blende 2/10 GLASS - 222 (per driller)
222½	225	Gray dolomite limestone (coarse cuttings), dark brown limestone 80-20, chocolate brown shale 1, marcasite 2/10, trace blende McGREGOR - 223
225	227	Gray dolomite limestone, some "Glassrock" ravellings, marcasite 3/10, trace blende

Total depth measured 225.5' with steel tape
Water at 59'

Land Description: Northwest ¼ of Southeast ¼

Location of Hole: 300' South from #40

Geologist: H. V. Davis

DRILL RECORD

THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 44

Property Name: FRANCIS M. CALVERT
Began: August 31,1953. Finished: September 3,1953.
Drill Owner: J. P. Robinson
Drill Runner: L.J.Brown COLLAR ELEVATION: 996.66'

DEPTH		DESCRIPTION
0	5	Soil
5	10	Buff clay, gray dolomitic limestone 95-5, few specks of limonite, marcasite, few specks of blende
10	20	Buff clay
20	25	Buff clay, buff dolomite 80-20, trace of limonite, few specks dark buff and red chert
25	30	Buff clay, light buff dolomite 70-30, trace of limonite
30	35	Buff clay, light buff dolomite 75-25
35	40	Buff dolomite, buff clay 80-20
40	50	Buff dolomite, buff clay 85-15, trace of limonite
50	60	Buff dolomite, buff clay 90-10
60	65	Buff dolomite, buff clay 95-5, limonite 1
65	70	Coarse cuts: Dark buff dolomite, limonite 4.
70	75	Buff dolomite, limonite 3
75	80	Buff dolomite, limonite 25
80	85	Buff dolomite, limonite 30
85	90	Buff dolomite, limonite 90
90	95	Buff dolomite (coarse cuts), limonite 40, marcasite 10
95	100	Buff dolomite (coarse cuts), limonite 40, marcasite 25
100	105	Dark buff dolomite, limonine 30, marcasite 20
105	110	Dark buff dolomite, limonite 70, marcasite 5. DRAW- 112.5'
110	115	Dark buff dolomite, brown-buff chert 98-2, limonite 57, marcasite 3,
115	120	Coarse cuts: Dark brown-buff dolomite, buffish gray-brown chert 90-10, limonite 50, marcasite 10
120	125	Coarse cuts: Dark buff dolomite, gray-brown dark buff and marcasite-speckled chert 92-8, limonite 65, marcasite 15, a speck of galena
125	130	ark buff dolomite, marcasite-speckled chert 95-5, limonite 20, marcasite 5,
130	140	Buff dolomite, brown-buff chert 93-7, limonite 19, marcasite 1
140	150	Buff dolomite, buffish gray-brown chert, white chert and marcasite-speckled chert 92-8, limonite 17, marcasite 1
150	160	Buff dolomite, brown-gray chert 93-7, limonite 25, marcasite 1/2
160	170	Buff dolomite, light gray & tan chert 97-3, limonite 5, trace of marcasite
170	175	Buff dolomite, brown and light gray clay, brown-gray chert 90-8-2, limonite 6, marcasite 1/2
175	180	Buff dolomite, brown-gray & marcasite-speckled chert 94-6, limonite 8, marcasite 2, a speck of galena
180	185	Buff dolomite, tan and light brown-gray chert 95-5, trace of gray clay, limonite 1/2, trace of marcasite

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 44 (CON'T.)

Property Name: FRANCIS M. CALVERT

DEPTH		DESCRIPTION
185	195	Buff dolomite, light tan chert, buffish-brown chert 92-7-1, limonite 2/10, few specks of marcasite
195	200	Coarse cuts: Buff dolomite, light tan chert 91-9, limonite 2/10, few specks of limonite
200	205	Buff dolomite, light tan and light brown chert 90-10, trace of limonite
205	210	Buff dolomite, light tan chert 96-4, dark gray clay 1, thin trace of marcasite and limonite
210	215	Buff and dark buff dolomite, tan and gray-brown chert 94-6, trace of dark gray clay
215	220	Coarse cuts: Dark buff dolomite, few specks green clay, tan chert 1, CLAY - 213'
220	222½	Dark buff coarse green dolomite, few specks green shale, little chert ravellings, trace of dark gray clay
222½	225	Dark buff coarse green dolomite, few specks green shale, little chert ravellings, trace of dark gray clay
225	227½	Dark buff coarse green dolomite, few coarse cuts brown-gray dolomite, green shale 2, trace of dark gray clay, trace of marcasite BLUE - 227'
227½	230	Dark buff coarse green dolomite, brown-gray dolomite 5, green shale 3, few specks of marcasite
230	232½	Coarse cuts: Dark buff coarse green dolomite, dark gray dark-speckled dolomite, brown dolomitic limestone 50-30-20, trace of marcasite OIL ROCK - 231.5' (?)
232½	235	Dark buff coarse green dolomite, brown dolomitic limestone, dark gray dark-speckled dolomite, dark gray slay, dark brown shale 70-20-7-2-1, few specks of marcasite. CLAY -237.5'
235	237½	Dark buff coarse green dolomite, brown dolomitic limestone, dark gray dark-speckled dolomite (all coarse cuts), trace of marcasite, a speck of green shale. GLASS - 238'
237½	240	Dark buff dolomite, brown dolomitic limestone, green clay 85-10-5m few cuts dark gray dark-speckled dolomite, trace of green shale, marcasite 2/10, few specks of phosphate
240	243	Ravelling from all overlying beds. Dark brown dolomite 95-5, marcasite 1/10 McGREGOR - NOW DETECTED ESTIMATED AT 241' (?)

T.D.: 242.9 feet, with steel tape
Water: 73.5 feet
Assays: No.
Location: 300' N. form D.H.# 43

8½" hole 0-127'
6½" hole 127-190'
4 7/8" hole 190 - 243'
Set 127' of 6 5/8" pipe
Set 202' of 4 7/8" pipe/

Loose ground 92½ - 241½
Hard ground 241½ - 243
Very difficult drilling due to caving. Impossible to pick formation tops with any degree of accuracy. No McGregor detected. Indicated 'tops' are simply guesses.

HWD.

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 45

Property Name: FRANCIS M. CALVERT
Began: September 4,1953. Finished: September 9,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown.

COLLAR ELEVATION: 977.68'

DEPTH		DESCRIPTION
0	5	Soil
5	10	Buff clay
10	15	Buff dolomite
15	25	Buff dolomite
25	35	Buff dolomite
35	45	Buff dolomite, few specks of limonite
45	55	Dark buff dolomite, limonite 1/2
55	60	Dark buff dolomite, limonite 2/10
60	65	Gray-buff marcasite-speckled dolomite, limonite and marcasite 15
65	70	Gray marcasite-speckled dolomite, limonite & marcasite 20
70	75	Light gray marcasite-speckled dolomite, marcasite and limonite 8
75	80	Light gray dolomite (slightly marcasite-speckled), marcasite and limonite 2
80	85	Light gray dolomite, light gray and white chert 97-3, DRAB - 82.5' limonite and marcasite 1
85	90	Light gray dolomite, light gray and white chert 93-7, marcasite and limonite 2, few specks of blende
90	95	Light gray dolomite, light gray and white chert 93-7, marcasite 2, trace of limonite
95	100	Light cream dolomite, light gray and white chert 85-15, marcasite 1, trace of limonite
100	110	Light gray dolomite, light gray and white chert 96-4, limonite 3, marcasite 2/10
110	120	Light gray dolomite, light gray and white chert with slight marcasite-speckled 90-10, marcasite 4, limonite 1
120	130	Light gray dolomite, light gray and white chert 92-8, marcasite 8, limonite 1/2
130	140	Light gray dolomite, light gray and white chert 93-7, marcasite 5, trace of limonite
140	145	Light cream dolomite, white chert 95-5, marcasite 3 (small recovery)
145	150	Brown dolomite, tan chert 94-6, marcasite 2
150	160	Brown dolomite, tan chert 96-4, marcasite 3
160	165	Brown dolomite, heavily marcasite-speckled chert 75-25, marcasite 22, trace of dark gray clay
165	170	Brown dolomite, heavily marcasite-speckled chert 92-10, marcasite 35
170	175	Brown dolomite, heavily marcasite-speckled chert 50-50, marcasite 30
175	180	Brown dolomite, marcasite-speckled chert and brown chert 92-8, marcasite 15
180	185	Gray-brown marcasite-speckled dolomite, marcasite 20
185	187½	Gray dolomite, marcasite 8

(CONTINUED ON NEXT PAGE)

Geologist: h. W. Davis

DRILL HOLE NO. 45 CON'T.

Property Name: FRANCIS M. CALVERT

DEPTH		DESCRIPTION
187½	190	Gray dolomite, marcasite 7
190	192½	Brown-gray dolomite, marcasite 4
192½	195	Brown-gray dolomite, marcasite 8
195	197½	BrownOgray dolomite, marcasite 10
197½	200	Brown-gray dolomite, marcasite 5
200	202½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, marcasite 6, gray clay 2 — BLUE - 200.5'
202½	205	Gray dark-speckled dolomite, trace of gray clay, marcasite 8
205	207½	Gray dark-speckled dolomite, brown shaly limestone 95-5, marcasite 8 — OIL ROCK - 207.4'
207½	210	Brown shaly limestone and gray fossiliferous dolomitic limestone, light gray clay 80-20, marcasite 5, trace of blende
210	212½	Green clay, gray-brown fossiliferous dolomitic limestone 60-40, marcasite 4, few specks of blende and galena
212½	215	Dark brown dolomite, gray clay 80-20, marcasite 5, few specks of galena
215	217½	Brown and tan limestone, gray marcasite-speckled dolomitic limestone (coarse cuts) 90-10, marcasite 4, few specks blende
217½	220	Gray marcasite-speckled dolomitic limestone, marcasite 2, a speck of galena

CLAY - 209.5'

GLASS ROCK - 213.0'

McGREGOR - 217.2'

T.D.H: 218.7 feet, with steel tape
Water: 55 feet
Assays: Yes
Location of DrillHole: 50 feet North from DrillHole #41

	Blende	FeS2	Galena
210 - 212½	0.30	10.7	0.15

DRILL RECORD
THE EAGLE-PICHER COMPANY

HOLE NO. 45

Property Name: FRANCIS M. CALVERT
Began: 9-4-53 Finished: 9-9-53
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

Elevation: 977.60

ASSAY

DEPTH	BLENDE	FeS_2	GALENA
60 - 65	0.35	25.68	0.16
65 - 70	0.15	32.74	0.17
160 - 165	0.15	17.54	0.15
165 - 170	0.10	20.54	0.15
170 - 175	0.15	20.33	0.15
175 - 180	0.35	14.55	0.15
180 - 185	0.20	16.69	0.15
195 - 197½	0.15	9.84	0.17
207½ - 210	0.45	10.05	0.15

[illegible]

[illegible]

[illegible]: [illegible]-11-[illegible] [illegible]: 7[illegible].14

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - [illegible]5	[illegible].05	[illegible].[illegible]1	0.15
[illegible] - 140	[illegible].1[illegible]	[illegible].76	0.13
[illegible] - 145	[illegible].[illegible]	[illegible]	[illegible]
[illegible] - [illegible]	0.1[illegible]	[illegible]	[illegible]
[illegible] - [illegible]	[illegible]	[illegible]	0.15
[illegible] - [illegible]	[illegible]	21.40	0.1[illegible]
[illegible] - [illegible]	[illegible]	[illegible]	0.1[illegible]
[illegible] - [illegible]	0.1[illegible]	11.[illegible]	0.13
[illegible] - [illegible]	0.1[illegible]	[illegible]	[illegible]
[illegible] - [illegible]	0.1[illegible]	[illegible]	0.13

V565

Geologist: H. W. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 47

Property Name: FRANCIS M. CALVERT
Began: September 14,1953. Finished: September 16,1953.
Drill Owner: J.P.Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 964.77'

DEPTH		DESCRIPTION
0	10	Buff clay
10	15	Buff clay, coarse dark buff chert and buff dolomite, 90-5-5, trace of limonite
15	20	Buff dolomite
20	30	Buff dolomite
30	45	Buff dolomite
45	60	Buff dolomite, few specks calcite and marcasite
60	65	Brown dolomite, brown chert 99-1, trace of marcasite DRAB - 63'
65	70	Brown dolomite, gray and brown marcasite-speckled and tan chert 92-8, marcasite 7/10
70	80	Brown dolomite, tan and brown-gray chert 94-6, marcasite 3
80	90	Gray-brown dolomite, brown-gray chert 96-4, marcasite 8/10
90	100	Light gray dolomite, white chert 95-5, trace of pale green clay, marcasite 3/10
100	110	Brown-gray dolomite, gray and light tan chert 93-7, marcasite 1
110	120	Gray-brown dolomite, tan chert 98-2, marcasite 4/10
120	130	Light brown dolomite, tan chert 96-4, marcasite 2/10
130	135	Brown dolomite, few specks tan chert, marcasite 1/10
135	140	Dark brown marcasite-speckled dolomite, marcasite 10
140	145	Dark brown dolomite, gray marcasite-speckled chert 93-7, marcasite 9
145	150	Dark brown dolomite, gray marcasite-speckled chert 92-8, marcasite 8
150	155	Dark brown dolomite, gray marcasite-speckled chert 91-9, marcasite 10
155	160	Dark brown dolomite, gray marcasite-speckled chert 97-3, marcasite 12 GRAY - 160'
160	165	Brown-gray marcasite-speckled dolomite, marcasite 3, a speck of calcite
165	167½	Brown-gray marcasite-speckled dolomite, marcasite 3
167½	170	Gray-brown marcasite-speckled dolomite, marcasite 9
170	172½	Gray-brown marcasite-speckled dolomite, marcasite 10
172½	175	Brown-gray marcasite-speckled dolomite, marcasite 18 BLUE - 175'
175	177½	Gray dark-speckled dolomite, gray-brown dolomite 95-5, gray clay 3, marcasite 17
177½	180	Gray dark-speckled marcasite-speckled dolomite, marcasite 10
180	182½	Small recovery: Gray dark-speckled marcasite-speckled dolomite, marcasite 20
182½	185	Brown dolomite, gray dark-speckled marcasite-speckled dolomite 70-30
185	187½	Brown fossiliferous dolomitic limestone, brown shale 99-1, marcasite 30 OIL ROCK - 183.2'
187½	190	Brown fossiliferous dolomitic limestone, brown shaly limestone, trace of brown clay, marcasite 12
190	192½	Brown fossiliferous dolomitic limestone, green clay 80-20, marcasite 10, a speck of blende, a speck of phosphate CLAY BED - 192'

(CONTINUED ON NEXT PAGE)

Geologist: H. W. Davis

DRILL HOLE NO. 47 CON'T.

Property Name: FRANCIS M. CALVERT.

DEPTH		DESCRIPTION
192½	195	Gray clay (Bentonite)
195	197½	Dark brown dolomite, grey clay 60-40, marcasite 5 CLAY - 192'
197½	200	Gray dolomitic limestone and grey clay, dark brown dolomite 95-5, marcasite 2 GLASS 196'
200	202	Coarse cuts: Gray marcasite-speckled dolomitic limestone, trace of calcite, marcasite 8 McGREGOR - 197.6'

T.D.M: 202.5 feet, with steel tape
Water: 43 feet
Assays: Yes.
Location of Hole: 75 feet North from Drill Hole #46.

DRILL RECORD
THE EAGLE-PICHER COMPANY

HOLE NO. 47

Property Name: FRANCIS M. CALVERT
Began: September 14, 1953 Finished: September 16, 1953
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown Elevation: 964.77

ASSAY

DEPTH	BLENDE	FeS_2	GALENA
155 - 160	Nil	7.06	0.12
170 - 172½	0.05	10.05	0.12
172½ - 175	Nil	13.48	0.12
175 - 177½	0.05	7.27	0.12
177½ - 180	0.10	11.77	0.12
180 - 182½	0.10	16.26	0.12
182½ - 185	0.15	19.90	0.12
185 - 187½	0.10	20.33	0.13
187½ - 190	0.15	11.12	0.12
210 - 212½	0.30	10.70	0.15

Last assay on hole 40 —

Geologist: H. . Davis.

DRILL RECORD
THE [illegible] COMPANY

DRILL HOLE NO. 48

Property Name: FRANCIS R. CALVERT.
Began: September 17,1953 Finished: September 22,1953.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown COLLAR ELEVATION: 963.77'

DEPTH		DESCRIPTION
0	5	Soil
5	25	Buff clay and soft buff dolomite boulders
25	30	Buff dolomite, trace of limonite
30	50	Buff dolomite, trace of limonite
50	55	Buff dolomite, dark brown-gray cave clay 60-40
55	60	Buff dolomite, trace of dark brown-gray cave clay
60	70	Coarse cuts: Buff dolomite, brown-gray clay 2
70	80	Buff dolomite, trace of brown-gray clay
80	85	Buff dolomite, light gray-brown clay 1 DRAY - 87.5'
85	90	Coarse cuts: Brown-buff dolomite, brown and gray-brown chert 98-2
90	95	Buff and brown-buff dolomite, trace of buff clay, brown and gray-brown chert 1
95	100	Brown and buff dolomite, gray and brown chert 95-5, thin trace of marcasite
100	110	Buff dolomite, dark buff glassy chert 90-10, gray clay 1, marcasite 2/10
110	120	Brown-buff dolomite, brown-gray chert and dark buff chert 91-6-3, trace of marcasite
120	130	Coarse cuts: Buff dolomite, dark buff glassy chert and gray and white chert 88-12, few specks of marcasite
130	140	Buff dolomite, dark buff glassy chert and brown and gray chert 90-10
140	150	Buff dolomite, tan chert and dark buff glassy chert 90-10, few specks of marcasite
150	155	No recovery
155	160	Some extra coarse cuts: Dark buff dolomite, tan chert 97-3,
160	170	No recoveries
170	175	Gray-brown and buff dolomite, tan and brown-gray (coarse) 85-15, specks of marcasite
175	180	Coarse cuts: Pale brown dolomite, gray chert (extra coarse) and tan chert 92-8, trace of marcasite, a speck of blende, gray coarse-grained dolomite 10 GRAY - 179.5'
180	185	Coarse cuts: Gray coarse-grained dolomite, brown-gray chert ravelling 8, trace of dark gray clay, marcasite 2, few specks of galena
185	190	Coarse cuts: Gray coarse-grained dolomite, considerable ravelling of buff dolomite and brown-gray chert, marcasite 7/10, few specks of galena
190	192½	Brown-gray coarse-grained dolomite, dark gray clay 80-20, some ravellings of buff dolomite and brown-gray chert, marcasite 1/2, few specks of galena

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 48 CON'T.

Property Name: FRANCIS W. CALVERT

DEPTH		DESCRIPTION
192½		
	195	Mostly ravelling from buff and cherty sections above, little brown-gray coarse-grained dolomite, marcasite 7/10, few specks of galena
195	197	No recovery: Set small casing BLUE - 195'(?)
197	202	Dark gray dark-speckled dolomite, trace of green shale, marcasite 2/10, few specks of brown shale, few fossiliferous cuttings
202	205	Brown shale and fossils, gray dark-speckled dolomite ravelling 80%, marcasite 3/10 OIL ROCK - 202'
205	207½	Ravelling gray dolomite, green shale, brown shale and fossils, 95-3-2, marcasite 2/10
207½	210	Ravelling gray dolomite, dark brown dolomitic limestone 95-5, trace of green shale, marcasite 2/10
210	212½	Very small recovery: Gray limestone and dolomitic limestone, brown limestone and dolomitic limestone 90-10, marcasite 2/10
212½	215	Gray dolomitic limestone, trace of marcasite GLASS - 207.5'(?) McCABOOR - 210.3'

T.D.M: 214.8 feet, with steel tape
Water: 46 feet
Assays: No.
Location of Drill Hole: 450 feet South from Drill Hole #13.

6½" hole to 197'
4 7/8" hole 197 to 215 feet. Set 210 feet of 4 7/8" pipe.

Remarks: Loose ground 95' to 210'
Hard at 210'
Strong water 150-155; 160-170

Geologist: H. F. Davis

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 49

Property Name: FRANCIS M. CALVERT
Started: Jan.14,1954. Finished: Jan.16,1954.
Drill Owner: J.F.Robinson
Drill Runner: L.J.Brown

Collar ELEVATION:
LOCATION: 300' N. & 50' W. from DH #4.

DEPTH		DESCRIPTION
0	10	Dark buff clay
10	15	Buff dolomite, buff clay 70-30
15	25	Dark buff-brown clay
25	30	Buff dolomite, limonite 1, few specks of marcasite
30	40	Buff dolomite (rather coarse cuts), limonite 2/10
40	45	Buff dolomite, limonite 3/10
45	50	Dark buff dolomite, limonite 1, few specks of galena
50	55	Dark buff dolomite, limonite 3, few specks of galena
55	60	Very coarse cuts: Dark buff dolomite, limonite 7, trace of galena
60	70	Buff dolomite to brown-buff dolomite, limonite 8, marcasite 1, few specks of galena
70	75	Buffish-brown dolomite, limonite-clay 4, limonite and marcasite 10, specks of galena
75	80	Buff dolomite, limonite/clay 10, limonite and marcasite 15, a speck of galena
80	85	Brown marcasite-speckled dolomite, limonite/clay 2, marcasite & limonite 20, specks of galena
85	90	Brown dolomite,(some marcasite-speckled), marcasite & limonite 6, a speck of galeite
90	95	Buffish-brown dolomite, brown chert 98-2, marcasite & limonite 5,
95	100	Buffish-brown dolomite, gray and marcasite-speckled chert 90-10, marcasite & limonite 8 DRAB- 92.5'
100	105	Buffish-brown dolomite, gray marcasite-speckled and brown chert 96-4, marcasite & limonite 5
105	110	Buffish-brown dolomite, gray and marcasite-speckled chert 93-7, limonite/clay 1, marcasite & limonite 3
110	120	Brown dolomite, gray & light brown-gray chert 92-8, marcasite 4
120	130	Pale brown-gray dolomite, light gray and white chert 94-6, marcasite 7/10
130	140	Gray-brown dolomite, gray chert 91-9, marcasite 1
140	150	Gray-brown dolomite, gray & tan chert 93-7, marcasite 1
150	160	Brown dolomite, tan chert 95-5, marcasite 6/10
160	165	Brown dolomite, light gray & tan chert 99-1, marcasite 7/10
165	170	No Recovery
170	180	Brown dolomite, tan & gray-brown chert 82-18, marcasite 2 1/2
180	185	Brown dolomite, tan & gray-brown chert 97-3, marcasite 2 1/2
185	190	Brown dolomite, gray dolomite 95-5, marcasite 1/2 GRAY-189.7'
190	195	Gray dolomite, marcasite 4/10
195	200	Brown-gray dolomite, marcasite 1/2 BLUE- 201.8'
200	202½	Gray dark-speckled dolomitic limestone, brown-gray dolomite 60-40, marcasite 2/10
202½	205	Dark gray dark-speckled dolomite, marcasite 3/10 OIL ROCK-206.5'
205	207½	Gray dark speckled dolomite, dark brown dolomite 60-40, marcasite 2/10
207½	210	Brown fossiliferous limestone and dark brown shale, marcasite 2/10
210	212½	Brown fossiliferous limestone and brown-gray dark speckled limestone, trace of green shale and light gray clay, marcasite 1/10, a speck of blende and galena CLAY- 212.5'

(CONTINUED ON NEXT PAGE)

Geologist: H. [illegible]. Davis

DRILL HOLE NO. 49 CON'T.

Property Name: FRANCIS M. CALVERT.

DEPTH		DESCRIPTION
212½	215	Brown limestone, green shale and dark gray fossiliferous limestone 70-30, marcasite 3/10, a speck of phosphate GLASS-211.2'
215	217½	Dark brown sugary dolomite, chocolate brown shale 99-1, marcasite 1/10
217½	220	Dark brown limestone and tan limestone, chocolate brown shale 99-1, marcasite 2/10
220	222½	Gray dolomitic limestone, dark brownlimestone 90-10, marcasite 1/10
222½	225	Gray dolomitic limestone, marcasite 1/10 McGREGOR- 220.1'

T.D.M: 226.0 feet, with steel tape

Water: At 54 feet

Assays: No

Geologist: H. W. Davis.

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 50

Property Name: FRANCIS M. CALVERT
Started: Jan. 18, 1954. Finished: Jan. 20, 1954.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 926.06'
LOCATION: S.78°E. 120' from D.H.# 31.

DEPTH		DESCRIPTION
0	7	Black soil
7	15	Coarse cuts: Buff dolomite, gray shale 95-5
15	20	Brown-buff dolomite and buff dolomite, few specks buff & red residual chert
20	25	Buffish-brown dolomite, dark buff & red chert 95-5, trace marcasite
25	30	Fine cuts: Buff dolomite, marcasite 1/2
30	35	Brown dolomite, dark buff chert and red chert (ravelling) 92-8, marcasite 3/10
35	40	Brown dolomite, gray-brown chert 98-2, some buff chert ravelling
		DRAB- 37.5'
40	45	Brown dolomite, marcasite speckled chert 85-15, marcasite 3, blende 1/10, a speck of galena
45	50	Brown dolomite, gray marcasite-speckled chert 88-12, brown chert 1, marcasite 7, blende 1/2
50	55	Brown dolomite, gray marcasite-speckled chert 93-7, marcasite 4, blende 2/10
55	60	Brown dolomite, few specks gray-brown chert, marcasite 1, blende 1/
60	65	Brown dolomite, brown-gray & marcasite-speckled chert 80-20, marcasite 8, blende 1
65	70	Brown dolomite, gray chert 92-8, marcasite 10, blende 1
70	75	Light gray dolomite, light gray and white chert 92-8, marcasite 2, blende 4/10
75	80	Gray-brown dolomite, light gray chert 98-2, marcasite 7, blende 4/1
80	85	Brown dolomite, gray chert and marcasite-speckled chert 90-10, marcasite 12, blende 6/10
85	90	Gray-brown dolomite, gray chert and marcasite-speckled chert 97-3, marcasite 15, blende 1/2
90	95	Brown dolomite, gray marcasite-speckled & tan chert 88-12, marcasite 18, blende 3/10
95	100	Brown dolomite, tan chert 94-6, marcasite 8, blende 1/10
100	105	Brown dolomite, tand & gray chert 95-5, marcasite 20, blende 2
105	110	No recovery.
110	115	Dark brown marcasite-speckled dolomite, marcasite 25, few specks of blende
115	120	Brown dolomite, gray marcasite-speckled chert 75-25, some dark buff chert ravelling, marcasite 15, few specks of blende
120	125	Brown dolomite, gray marcasite-speckled chert 92-8, marcasite 18, a speck of blende
		GRAY- 125.3'
125	130	Gray dolomite, brown dolomite 95-5, marcasite 6, a speck of blende
130	132½	Gray dolomite, marcasite 4, few specks of blende
132½	135	Coarse cuts: Brown-gray marcasite speckled dolomite, marcasite 5, blende 3/10
135	137½	Gray and brown-gray dolomite, marcasite 7, blende 2
137½	140	No recovery
140	142½	Gray-brown dolomite, marcasite 16, blende 1
142½	145	Gray-brown dolomite, trace of dark gray clay, marcasite 20, blende

(CONTINUED ON NEXT PAGE)

Geologist: H. . Davis.

DRILL HOLE NO. 50 CON'T.

Property Name: FRANCIS M. CALVERT.

DEPTH		DESCRIPTION
145	147½	Very small sample: Gray dolomite, gray dark speckled dolomite 80-20, marcasite 10, blende 10 BLUE- 147' (?)
147½	150	Gray dark speckled dolomite, trace of dark gray clay, marcasite 50, blende 12
150	152½	Gray dark speckled dolomite, gray clay 95-5, marcasite 25, blende 4
152½	155	Brown fossiliferous dolomitic limestone, marcasite 15, blende 3 OIL ROCK- 152.5'
155	157½	Brown fossiliferous dolomitic limestone, dark brown shale 80-20, marcasite 10, blende 2
157½	160	Green clay, brown fossiliferous dolomitic limestone 80-20, marcasite 7, blende 1, trace of phosphate CLAY BED- 158'
160	162½	Brown dolomite, green clay and bentonite 80-20, marcasite 10, blende 1 GLASS (per driller)- 162'
162½	165	Light gray dolomitic limestone, dark brown dolomite 80-20, marcasite 7, blende 1 McTRIGGER- 163'

T.D.M: 166.3' with steel tape

Water: At 4½ feet

Assays: Yes

REMARKS: There seems to be an excess thickness of "Gray" and the "Blue" is rather thin.

Driller reports 'Broken Ground' at 80 to 150 feet and mostly small recoveries.

Oil Rock and Glass Rock were 'Soft'

A S S A Y S

		Blende	FeS2	Galena
60	65	0.10	8.13	Trace
65	70	0.35	5.13	"
80	85	0.25	7.06	"
100	105	0.60	9.63	"
110	115	0.10	15.40	"
135	137½	7.00	12.19	"
140	142½	1.00	13.91	"
142½	145	9.55	14.55	"
145	147½	8.05	11.77	"
147½	150	4.05	36.80	"
150	152½	0.95	18.60	"
152½	155	0.85	16.90	"
155	157½	0.25	11.34	"

Geologist: H. W. Davis.

DRILL RECORD
THE EAGLE-PICHER COMPANY

DRILL HOLE NO. 51

Property Name: FRANCIS M. CALVERT
Started: Jan.20,1954. Finished: Jan.23,1954
Drill Owner: J. F. Robinson
Drill Runner: L.J.Brown

COLLAR ELEVATION: 950.07'
LOCATION: Midway #33 (Calvert) & #7 (C.P.Ralph)

DEPTH		DESCRIPTION
0	3½	Brown and Buff clay
3½	10	Coarse cuts: Buff dolomite trace of limonite
10	20	Coarse cuts: Buff dolomite, trace of limonite
20	30	Rather dark buff dolomite trace of limonite
30	35	Buff dolomite trace of brown-buff dolomite, limonite and marcasite 2, a speck of blende
35	40	Buff dolomite, trace of brown-buff dolomite, marcasite and limonite 7, blende 3/10
40	45	Fairly coarse cuts: Gray-brown dolomite, buff dolomite 95-5, marcasite 1, few specks of blende
45	50	Brown marcasite-speckled dolomite, marcasite 12, blende 2/10
50	55	Buffish-brown dolomite, marcasite 3, blende 1/10
55	60	Buffish-brown dolomite, marcasite 2, trace of blende
60	65	Brown dolomite, few specks calcite, marcasite 6/10, few specks blen
65	70	Buffish brown dolomite, gray chert 94-6, marcasite 1, blende 1/2 DRAB- 67.5'
70	75	Buffish brown dolomite, gray chert 92-8, marcasite 10, blende 1 (?)
75	80	Brown dolomite, gray-brown chert 93-7, marcasite 8, blende 6/10
80	85	Brown dolomite, gray chert 99-1, marcasite 3, blende 8/10
85	90	Pale brown dolomite, light gray and tan chert 90-10, marcasite 10, blende 2.
90	95	Pale brown-gray dolomite, light gray chert 99-1, marcasite 5, blend
95	100	Light gray dolomite, light gray chert 90-10, marcasite ½, blende 6/10
100	105	Pale gray-brown dolomite, light tan chert 95-5, marcasite 2, blende 4/10
105	110	Brown dolomite, gray chert 97-3, marcasite 1, blende 1/10
110	115	Brown dolomite, gray & gray-brown chert 80-20, marcasite 12, blende
115	120	Brown dolomite, few specks gray chert, marcasite 1, blende 2/10
120	125	Brown dolomite, tan & gray chert 92-8, marcasite 2, blende 1/10
125	130	Brown dolomite, tan chert 99-1, marcasite 2, blende 1/10
130	135	Brown dolomite, tan chert 94-6, trace of pale green shale, marcasite 2½, trace of blende
135	140	Dark brown marcasite-speckled dolomite, few specks chert, marcasite
140	145	Buffish-brown dolomite, tan chert 98-2, marcasite 4, specks of blend
145	150	Rather coarse cuts: Dark brown dolomite, light brown chert 92-8, marcasite 1
150	155	Rather coarse cuts: Dark brown dolomite, brown chert 93-7, marcasite 7/10
155	160	Brown dolomite, tan chert 98-2, marcasite 10
160	165	Fairly coarse cuts of rather dark brown dolomite, marcasite 7
165	170	Gray dolomite, brown dolomite 90-10, marcasite 5 GRAY- 165.5'
170	172½	Gray dolomite, marcasite 2
172½	175	Coarse cuts: Brown-gray dolomite, marcasite ½, few coarse specks of blende
175	177½	Fine cuts: Gray dolomite, marcasite 4 BLUE-179.5'
177½	180	Fine cuts: Brown-gray dolomite, gray clay 80-20, marcasite 3
180	182½	Dark brown-gray dark speckled dolomite, trace of gray clay, marcasite 1½

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 51 CON'T.

Property Name: FRANCIS M. CALVERT.

DEPTH		DESCRIPTION
182½	185	Brown fossiliferous dolomitic limestone, gray dark speckled dolomite 60-40, marcasite 1 OIL ROCK- 183.5'
185	187½	Dark brown fossiliferous dolomitic limestone, marcasite 3
187½	190	Green clay, brown fossiliferous dolomitic limestone 80-20, marcasite 1 CLAY BED- 188'
190	192½	Coarse cuts: Dark brown sugary dolomite, chocolate brown shale 80-20, marcasite 1/2 GLASS ROCK- 190'
192½	195	Gray dolomitic limestone, dark brown dolomite 97-3, marcasite 2
195	197½	Brown-gray dolomitic limestone (some course cuts), marcasite 1½ McGREGOR-192.5'

T.D.H: 198.6 feet, with steel tape

WATER: At 29 feet. (Adjust down 1 ft.)

Assays: Yes

DRILLING REMARKS: Lost most of cuttings 70 to 95'
Broken ground 125 - 170'
Soft ground 177½ - 190'

A S S A Y S

		Blende	FeS2	Galena
45	50	0.40	6.42	Trace
70	75	1.30	4.49	"
75	80	0.75	6.42	"
80	85	1.25	6.20	"
85	90	2.20	9.84	"
90	95	4.20	4.28	"
110	115	0.60	10.48	"

Geologist: H. N. Davis.

DRILL RECORD
THE FOLD-FISHER COMPANY

DRILL HOLE NO.52

Property Name: FRANCIS M. CALVERT
Started: Jan.25,1954. Finished: Jan.27,1954. COLLAR ELEVATION: 986.85'
Drill Owner: J. F. Robinson LOCATION: 60' S. & 150' W.
Drill Runner: L.J.Brown from DH #38.

DEPTH		DESCRIPTION
0	11	Brown-buff clay
11	15	Buff dolomite, gray dolomite 95-5, specks of marcasite
15	20	Coarse cuts: Buff dolomite, specks of gray dolomite, speck of marcasite
20	25	Buff dolomite, buff clay 90-10
25	35	Buff dolomite
35	50	Buff dolomite
50	70	Buff dolomite (rather dark)
70	80	Buff dolomite (rather dark)
80	90	Dark buff calcareous dolomite
90	95	Darkbuff to brown-buff dolomite, few specks limonite
95	100	Buff dolomite, light gray dolomite 60-40, trace of buff clay, trace of marcasite DRAB-100'
100	105	Light gray dolomite, light gray chert and white chert 92-8, marcasite 4
105	110	Light brown-gray dolomite, light gray chert & white chert 96-4, marcasite 2
110	120	Light brown-gray dolomite, light gray chert & white chert 93-7, marcasite 1½
120	130	Gray dolomite, gray & white chert 98-2, marcasite ½
130	140	Light brown-gray dolomite, light gray & white chert 91-9, marcasite 2/10
140	150	Light brown-gray dolomite, gray & brown-gray chert 92-8, marcasite 1
150	155	Light brown-gray dolomite, light gray chert 96-4, marcasite 1
155	160	Brown dolomite, tan chert 95-5, few specks marcasite-speckled chert, marcasite 4/10
160	165	Brown dolomite, tan chert 96-4, trace of marcasite
165	170	Brown dolomite, tan chert 85-15, marcasite 3/10
170	180	Brown dolomite, tan chert 99-1, marcasite 2
180	190	Brown dolomite, tan & marcasite-speckled chert 90-10, marcasite 10
190	195	Brown dolomite, brown, tan & marcasite speckled chert 95-5, marcasite 6
195	200	Dark brown dolomite, trace of chert, marcasite 8 GRAY- 200'
200	205	Gray dolomite, marcasite 1
205	207½	Gray dolomite, marcasite 1
207½	210	Gray-brown dolomite, marcasite 3/10
210	212½	Gray-brown dolomite, marcasite 1
212½	215	Gray-brown dolomite, gray clay 80-20, few specks gray dark-speckled dolomite, marcasite 1
215	217½	Gray dark-speckled dolomite, marcasite 6/10
217½	220	Gray dark-speckled dolomite, gray clay 60-40, marcasite 8/10
220	222½	Dark brown fossiliferous dolomitic limestone, marcasite ½, few specks of blende OIL ROCK-220.0'
222½	225	Dark brown fossiliferous dolomitic limestone, green clay 95-5, marcasite 3/10, trace of blende CLAY BED- 224.9'
225	227½	Gray clay, dark brown dolomite (coarse cuts) 80-20, marcasite 2/10, few specks of blende GLASS ROCK- 227.0'

(CONTINUED ON NEXT PAGE)

DRILL HOLE NO. 52 CONT'D.

Property Name: FRANCIS M. CALVERT.

DEPTH	DESCRIPTION
227½ 230	Coarse cuts: Gray dolomitic limestone, dark brown dolomite and chocolate brown shale 60-40, marcasite 2/10, a speck of blende MgOR OOR- 228.5'

T.D.N: 231.5 feet, with steel tape

Water: At 67 feet (Adjust down 1½ feet)

Assays: No.

DRILLER'S REMARKS:

Broken ground and lost some cuttings 185 to 200 feet.

Soft bottom.

Geologist: H. W. Davis

DRILL RECORD
THE BOOM-PICKER COMPANY

DRILL HOLE NO. 53

Property Name: FRANCIS M. CALVERT
Started: Jan.28,1954. Finished: Feb.1,1954.
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

COLLAR ELEVATION: 965.01'
LOCATION: 75' N. & 100' W. from DH #36.

DEPTH		DESCRIPTION
0	8	Soil
8	10	Buff dolomite
10	15	Coarse cuts: Buff dolomite
15	25	Coarse cuts: Buff dolomite
25	35	Buff dolomite (rather dark)
35	45	Buff dolomite
45	55	Dark buff and buff dolomite, a speck of marcasite
55	60	Dark buff dolomite, speck of marcasite
60	65	Brown dolomite, buff dolomite 70-30, thin trace of marcasite
65	70	Brown dolomite, buff dolomite 97-3, speck of calcite, marcasite 1/
70	75	Brown dolomite, buff dolomite 99-1, trace of calcite, marcasite 1/10 DRAB- 77'
75	80	Brown dolomite, gray chert 95-5, trace of brown chert, marcasite 2
80	85	Brown dolomite, gray-brown and tan chert 92-8, marcasite 2
85	90	Brown dolomite, gray, brown, tan and marcasite-speckled chert 90-10, marcasite 1
90	100	Brown dolomite, gray and marcasite speckled chert 93-7, marcasite
100	110	Brown dolomite, light gray and white chert 93-7, marcasite 2
110	120	Pale brown dolomite, light gray chert 96-4, marcasite 1
120	130	Gray-brown dolomite, gray chert 93-7, marcasite 4/10
130	140	Brown dolomite, tan and gray-brown chert 97-3, marcasite 2
140	150	Brown dolomite, gray chert 99-1, marcasite 3
150	155	Brown dolomite, gray marcasite-speckled chert 95-5, marcasite 7
155	160	Brown dolomite, gray marcasite speckled chert 94-6, marcasite 12, a speck of blende
160	165	Brown dolomite, gray and light brown chert 93-7, marcasite 2
165	170	No recovery
170	177½	No recovery
177½	180	Brown dolomite (medium cuts), gray dolomite (coarse cuts) 80-20, trace of dark gray cave clay, trace light gray clay, marcasite 9, blende 1/10 GRAY- 179.5'
180	182½	Very small recovery: Gray dolomite, considerable brown dolomite and chert ravelling, dark gray clay 2, marcasite 15, blende 1
182½	185	No recovery
185	187½	Gray dolomite, trace of dark gray clay, marcasite 20, blende 3
187½	190	Very small recovery: Brown-gray dolomite, some brown dolomite & chert ravellings, marcasite 15, blende 2 BLUE- 192.5'
190	192½	Gray dolomite, marcasite 7, blende 4/10
192½	195	Light gray dolomite with few dark specks, trace of gray clay, marcasite 10, blende 3/10
195	197½	Light gray dolomite with few dark specks, gray clay 1, marcasite 18, blende 1
197½	200	Gray dark speckled dolomite, brown dolomite and fossiliferous dolomite, 95-5, marcasite 15, blende 1/2
200	202½	Brown fossiliferous dolomite and brown clay, marcasite 6, blende 2/10, a speck of galena

(CONTINUED ON NEXT PAGE)

Geologist: H. F. Davis

DRILL HOLE NO. 53 CON'T.

Property Name: FRANCIS M. CALVERT

DEPTH		DESCRIPTION
202½	205	Brown fossiliferous dolomite, green clay 60-40, marcasite 4, blende 1/10, a speck of galena, trace of phosphate
205	207½	Bentonite, dark brown dolomite and chocolate brown shale, gray dolomitic limestone, 97-2-1, marcasite 2/10, a speck of blende and galena
207½	210	Gray dolomitic limestone, trace of chocolate brown shale, marcasite 1, blende 2/10, a speck of galena

OIL ROCK- 199.9'
CLAY- 204'
GLASS ROCK- 207.4'
McGREGOR- 207.5'

T.D.M: 210.0 feet, with steel tape

Water: At 45 feet.

Assays: Yes.

DRILLERS REMARKS:

Broken ground 155 to 192½

Soft bottom.

A S S A Y S

		Blende	FeS2	Galena
155	160	0.05	9.85	Trace
185	187½	1.45	12.19	"
187½	190	0.65	10.05	"
190	192½	0.25	5.56	"
192½	195	0.30	11.98	"
195	197½	0.25	19.47	"
197½	200	0.15	19.26	"

Geologist: R. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 5

Property Name: VERNA B. COIK Tract #2
Began: 6-13-52 Finished: 6-16-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Total Depth 125
Collar Elevation
Water Level 57'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buff clay
10	15	Brown buff clay, buff dolomite & chert 15
15	20	Brown clay, buff dolomite & chert 10
20	25	Buff dolomite, brown & buff chert 97-3, few specks limonite
25	35	Buff dolomite, buff & tan chert 90-10, limonite ½
35	45	Buff dolomite, brown & tan chert 94-6, trace limonite
45	55	Buff dolomite, brown & tan chert 95-5, a speck limonite
55	65	Brown-buff dolomite, brown & tan chert 98-2, few specks limonite
65	75	Brown-buff dolomite, brown & tan chert 97-3, a speck limonite
75	85	Brown-buff dolomite, brown & tan chert 90-10, few specks limonite
85	95	Brown-buff dolomite, brown & tan chert 99-1, trace calcite, few specks limonite
95	100	Brown-buff & brown dolomite, trace calcite, trace limonite
100	105	Brown-buff & brown dolomite, few specks calcite, trace limonite
105	110	Gray dark-speckled dolomite, buff dolomite & brown chert 5, few specks limonite & marcasite BLUE - 105
110	112½	Gray dark-speckled dolomite, brown & buff dolomite 10, marcasite 1/10
112½	115	Dark to light brown dolomite limestone, gray dark-speckled dolomite 60-40, trace marcasite, few specks blende OIL -113.5
115	117½	Dark to light brown limestone, trace calcite, trace marcasite, a speck blende
117½	120	Light brown limestone, dark brown limestone 10, trace marcasite, blende 2 CLAY - 120
120	122½	Dark brown & brown limestone, black shaly limestone 20, few specks green shale & gray clay, trace marcasite, blende 1/10
122½	125	Gray dolomite limestone, brown & dark brown limestone 5, buff dolomite 3, trace marcasite, trace blende GLASS-120.5 McGREGOR - 122.5

Total depth measured 126.0' with steel tape.

Land Description: SE¼ of NW¼ of Sec. 31 T-2-N R-1-E of 4th PM.

Location of Hole: S 45° W 100' from DH #3.

Geologist: R. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 6

Property Name: VERNA B. COLE Tract #2
Began: 6-16-52 Finished: 6-18-52
Drill Owner: J. F. Robinson
Drill Runner: Dave Taylor

Total Depth 132.5

Collar Elev.
Water Level 59'

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Brown-buff clay, some buff dolomite & chert
10	15	Brown clay, few cuttings buff dolomite & chert
15	20	Buff dolomite, brown chert 97-3, limonite ½
20	30	Buff dolomite, brown & tan chert 99-1, trace limonite
30	40	Buff dolomite, gray & tan chert 96-2, trace limonite
40	50	Buff dolomite, brown & tan chert 96-4, few specks limonite
50	60	Buff dolomite, brown & tan chert 95-5, few specks limonite
60	70	Buff dolomite, brown & tan chert 99-1, few specks limonite
70	80	Buff dolomite, brown & tan chert 97-3, few specks limonite
80	90	Buff dolomite, brown & tan chert 94-6, few specks limonite
90	95	Buff dolomite, tan chert 99-1, a speck limonite
95	100	Buff dolomite, few specks tan chert, trace limonite
100	105	Brown-buff dolomite, few specks tan chert, few specks limonite
105	110	Brown-buff dolomite, few specks brown & tan chert, few specks limonite
110	115	Brown-buff dolmite, limonite stained buff clay 5, few specks limonite
115	117½	Buff limonite stained dolomite & brown-buff dolomite, few fossils, limonite 4
117½	120	Buff limonite stained dolomite & light brown dolomite, few fossils, brown chert 1, limonite 5
120	122½	Gray, brown buff & brown-buff dolomite, gray clay 5, trace calcite, limonite & marcasite 10, gray dark-speckled dolomite 5
122½	125	Brown & tan limestone, gray brown & buff dolomite 10, limonite & marcasite 8 OIL - 128.5
125	127½	Tan limestone, trace buff & brown dolomite, limonite & marcasite 7, few specks blende
127½	130	Green shale & gray clay, dark brown limestone, tan limestone 60-20-20, buff & brown dolomite 15, marcasite & limonite ½ CLAY - 128
130	132½	Brown & dark brown dolomite limestone, gray dolomite limestone 60-40, buff dolomite 10, gray clay 5, marcasite & limonite 1 GLASS - 129.5 McGREGOR - 131.5

Total depth measured 132.4' with steel tape

Land Description: SE¼ of NWP of Sec. 31 T-2-N R-1-E of 4th PM

Location of Hole: 50' E from DH #3

Geologist: E. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 7

Property Name: VERNA B. COLE Tract #2
Began: 6-18-52 Finished: 6-23-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Total Depth 130

Collar Elev._____
Water Level _____

DEPTH From	To	DESCRIPTION
0	5	Red-buff clay
5	10	Brown-buff clay
10	15	Brown-buff clay, buff dolomite & chert, trace limonite
15	20	Brown-buff clay, buff dolomite & chert, trace limonite
20	25	Buff sandy clay & buff dolomite, some tan chert, trace limonite
25	30	Buff dolomite, buff & tan chert 97-3 (28-30 open ground)
30	35	Coarse cuttings buff dolomite & brown & buff chert (32-35 open ground)
35	40	Coarse cuttings buff dolomite, tan chert 99-1
40	45	Very coarse cuttings buff dolomite, trace chert
45	55	Buff dolomite, brown & tan chert 99-1, trace limonite
55	65	Buff dolomite, brown & tan chert 97-3, few specks limonite
65	75	Buff dolomite, brown & tan chert 94-6, few specks limonite
75	85	Buff dolomite, brown & tan chert 99-1, a speck limonite
85	90	Buff dolomite, brown & tan chert 97-3, a speck limonite
90	95	Buff dolomite, gray & gray dark-speckled dolomite 80-20, trace marcasite & limonite GRAY - 94
95	97½	Buff dolomite, gray & gray dark-speckled dolomite 60-40, few specks limonite & marcasite
97½	100	Buff dolomite, gray & gray dark-speckled dolomite 90-10, trace limonite & marcasite
100	102½	Buff dolomite, brown chert 99-1, trace marcasite & limonite
102½	105	Buff dolomite, few specks brown chert, few specks limonite & marcasite
105	107½	Buff & brown dolomite, few specks brown & tan chert, few specks gray dolomite, few specks limonite & marcasite
107½	110	Gray dark-speckled dolomite, buff & brown dolomite 70-30, trace marcasite & limonite BLUE - 107.5
110	112½	Gray dark-speckled dolomite, buff dolomite 85-15, trace marcasite & limonite, a speck blende
112½	115	Gray dark-speckled dolomite, gray clay 80-20, trace buff dolomite, trace marcasite & limonite
115	117½	Brown dolomite limestone & brown limestone, brown clay 5, gray clay 10, gray dark-speckled dolomite, trace marcasite, few specks blende OIL - 115
117½	120	Brown & tan limestone, brown limy shale 5, trace marcasite
120	122½	Brown & tan limestone, green shale & gray clay 60-40, phosphate 1, trace marcasite, few specks blende
122½	125	Coarse cuttings, brown dolomite limestone, trace gray clay, trace calcite, marcasite ½, a speck blende
125	127½	Brown & light brown dolomite limestone, dark brown limy shale 15, few specks light gray fossiliferous limestone, trace marcasite

(Continued on next page)

Geologist: E. J. Poehlmann

HOLE NO. 7
Continued

Property Name: VERNA B. COLE tract #2

From To

127½ 130 Light gray brown fossiliferous dolomite limestone, trace green shale, brown limestone 5, trace marcasite

CLAY - 121.5
GLASS- 122.5
McGREGOR - 128.0'

Land Description: SE¼ of NW¼ of Sec. 31 T-2-N R-1-E of 4th PM

Location of Hole: 150' W from DH #3

Geologist: L. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 8

Property Name: VERNA B. COLE Tract #2
Began: 6-24-52 Finished: 6-26-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor

Total Depth 132.5
Collar Elev._____
Water Level_____

DEPTH From	To	DESCRIPTION
0	5	Buff clay & soil
5	10	Buff clay
10	15	Brown-buff clay
15	20	Brown-buff clay
20	25	Brown sandy clay, some buff dolomite & chert
25	30	Coarse cuttings buff dolomite, brown chert 90-10, trace limonite
30	40	Coarse cuttings buff dolomite, brown chert 92-8, trace brown clay
40	50	Coarse cuttings buff dolomite, brown & tan chert 85-15
50	60	Brown-buff dolomite, brown & tan chert 90-10, trace limonite (few coarse cuttings)
60	70	Brown-buff dolomite, brown & tan chert 98-2, trace brown clay, limonite ½
70	80	Brown-buff dolomite, brown & tan chert 90-10 (coarse cuttings), brown clay 5
80	90	Coarse cuttings brown-buff dolomite, brown & tan chert 95-5
90	95	Coarse cuttings brown-buff dolomite, brown & tan chert 90-10
95	100	Few coarse cuttings brown-buff dolomite, brown & tan chert 80-20, brown clay 10
100	105	Coarse cuttings brown-buff dolomite, brown & tan chert 92-8
105	110	Brown-buff dolomite, brown & gray & red clays 15
110	115	Coarse cuttings brown & buff limonite stained dolomite & chert
115	120	Coarse cuttings brown & buff limonite stained dolomite & chert, buff clay 15 OIL - 120± ?
120	122½	Dark brown fossiliferous shaly limestone, buff dolomite & tan chert 60-, tan limestone 20, a speck marcasite
122½	125	Gray clay, brown & buff dolomite & chert 50, tan limestone 5, trace phosphate, few specks marcasite CLAY - 123±?
125	127½	Brown & buff dolomite & chert, gray clay 5, brown & tan limestone 1, a speck marcasite GLASS - 125±?
127½	130	Coarse cuttings, brown & buff dolomite & chert, glassrock limestone 5
130	132½	Coarse cuttings brown & buff dolomite & chert, buff clay 5, gray dolomite limestone 15, brown limestone & dark brown shale 5, a speck marcasite McGREGOR - 132±?

Total depth measured 132.9' with steel tape.

Land Description: SE¼ of NW¼ of Sec. 31 T-2-N R-1-E of 4th PM

Location of Hole: 300' W from DH #7

Wisconsin Geologist: E. J. Poehlmann

DRILL RECORD

Eagle-Picher Mining & Smelting Co.

Property Name: VERNA B. COLE Tract #2
Began: 2-5-52, finished 7-8-52
Drill Owner: Swalley Estate
Drill Runner (Day): Dave Taylor

Hole No. 11
Total Depth 132½
Water level 61½

Elev._____

From	To	
0	5	Brown soils
5	10	Buff & light gray/brown clay
10	20	Light buff clay, some buff dolomite
20	30	Dark buff clay, considerable pale buff dolomite & chert rubble
30	35	Buff dolomite-gray & buff chert 90-10, a speck limonite, trace brown clay
35	45	Buff dolomite-gray & buff chert 92-8, trace limonite
45	55	Buff dolomite-brown & gray chert 93-7, limonite ½
55	65	Buff dolomite-brown & gray chert 94-6, limonite 1
65	75	Buff dolomite-brown & tan chert 98-2, limonite ½
75	85	Buff dolomite-brown & tan chert 94-6, limonite ½
85	95	Buff dolomite-trace brown & tan chert, trace limonite
95	100	Buff dolomite-brown & tan chert 97-3, brown clay 5, trace limonite
100	102½	Light brown/buff to gray dolomite, trace limonite GRAY 101 plus/minus 1
102½	105	Light brown/buff to gray dolomite, trace limonite
105	107½	Light gray & some brown/buff dolomite, trace limonite, few specks marcasite
107½	110	Light gray dolomite, brown/buff dolomite 10, few specks limonite & marcasite
110	112½	Gray & gray dark/speckled dolomite, brown/buff dolomite 5, few specks limonite & marcasite BLUE 111 plus/minus 1
112½	115	Gray & gray dark/speckled dolomite & brown/buff dolomite 5, few specks limonite & marcasite
115	117½	Gray dark/speckled dolomite, trace buff dolomite, few specks limonite & marcasite
117½	120	Gray dark/speckled dolomite-light brown & tan dolomitic limestone 60-40, calcite 4, marcasite ½ OIL 119
120	122½	Brown & tan limestone, dark brown shale 5, trace calcite, marcasite ½, few specks blende
122½	125	Gray clay-light brown limestone 80-20, trace phosphate, trace marcasite CLAY 123
125	127½	Gray clay-brown dolomitic limestone 80-20, trace marcasite GLASS 127
127½	130	Gray dolomitic limestone-brown dolomitic limestone 60-40, gray clay 5, trace marcasite McGREGOR 128
130	132½	Gray dolomitic limestone, trace calcite, trace marcasite

T.D.M. 133' W.s.t.

Land Description: SE¼-NW¼ Sec. 31 T-2-N R-1-E of 4th P M

Location of Hole: 300' N from DH #8

DRILL RECORD

The Eagle-Picher Company—Mining & Smelting Division

Property Name: VERNA B. COLE Tract #2 — Hole No. 12
Began: 7-8-52, finished 7-10-52 — Total Depth 137½
Drill Owner: Swalley Estate
Drill Runner (Day): Dave Taylor — Elev._____

From	To	
0	5	Brown soil
5	10	Buff & gray/brown clay
10	20	Buff & brown clay
20	25	Buff dolomite-brown & tan chert 90-10, few specks limonite, few coarse cuttings
25	35	Buff dolomite-brown & tan chert 88-12, few coarse cuttings
35	45	Buff dolomite-brown & tan chert 95-5, brown clay 5, few coarse cuttings
45	55	Buff dolomite-brown & tan chert 92-8, few coarse cuttings
55	65	Buff dolomite-brown & tan chert 93-7
65	75	Brown/buff dolomite-brown & tan chert 98-2, few coarse cuttings
75	85	Brown/buff dolomite-brown & tan chert 98-2, few coarse cuttings
85	95	Buff dolomite-brown & tan chert 96-4
95	100	Pale brown dolomite & buff dolomite, trace brown & tan chert
100	102½	Light brown & buff dolomite, brown & tan chert 1, brown & buff clay 1
102½	105	Light brown & buff dolomite, buff clay 15 GRAY 102½-105
105	107½	Light brown & buff dolomite, buff clay 1
107½	110	Light brown & buff dolomite, brown & gray clay 5, a speck marcasite
110	112½	Light brown & buff dolomite
112½	115	Brown/buff & light brown dolomite, buff clay 1, few specks chert
115	117½	Brown & buff dolomite, brown clay 5
117½	120	Light brown & buff dolomite
120	122½	Brown/buff dark/speckled limy dolomite, coarse cuttings BLUE 120-122½
122½	125	Brown/buff dark/speckled limy dolomite, buff clay 10
125	127½	Coarse cuttings, buff & brown dolomite, brown limestone, brown clay & brown chert, a speck marcasite OIL 125-127½
127½	130	Coarse cuttings, buff & brown dolomite, brown limestone, buff & brown clay, green shale & gray clay, few specks marcasite CLAY 127½-130
130	132½	Coarse cuttings, green shale, gray clay, brown limestone, few specks phosphate, trace marcasite
132½	135	Brown dolomitic limestone, buff dolomite 15, green shale & gray clay 5, trace light brown limestone, trace marcasite
135	137½	Brown dolomitic limestone-gray dolomitic limestone 50-50, buff dolomite 8, light gray shale 10, green shale 3, gray/brown & brown shale 10, trace marcasite

T.D.M. 139.0' w.s.t. McGREGOR 136

No Assays. Signature: Edwin J. Poehlmann

Land Description: NE¼-NW¼ of Sec. 31, T-2-N, R-1-E of 4th P M

Location of Hole: 250' N from DH #11.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 14

Property Name: VERNA B. COLE (Tract # 2)
Began: 10-6-52 Finished: 10-9-52
Drill Owner: John F. Robinson
Drill Runner: Glen Wallace

DEPTH From	To	DESCRIPTION
0	10	Light brown clay
10	15	Buff clay
15	20	Dark buff clay, brown chert 99-1
20	25	Dark buff clay
25	30	Dark buff clay, buff calcareous dolomite
30	45	Dark buff clay, buff calcareous dolomite, trace gray chert
45	50	Buff dolomite, gray-brown chert 90-10, trace limonite
50	55	Coarse cuttings: buff dolomite, gray-brown chert 99-1, trace limonite
55	60	Some coarse cuttings: buff dolomite, gray-brown chert 95-5, trace limonite
60	70	Buff dolomite, gray-brown & tan chert 92-8, limonite 1
70	80	Buff dolomite, gray-brown chert 80-20, limonite 1
80	90	Dark buff dolomite, gray-brown & tan chert 90-10, limonite 1 GRAY - ????
90	95	Gray-buff dolomite, limonite 2
95	100	Gray dark-speckled dolomite, buff dolomitic ravellings 80-20, limonite 2, few specks marcasite BLUE - 98?
100	102½	Gray dark-speckled dolomite, buff dolomite ravellings 92-8, limonite 2, few specks marcasite
102½	105	Gray dark-speckled dolomite, buff dolomite ravellings 99-1, few specks marcasite
105	107½	Gray dark-speckled dolomite, gray-brown chert ravellings 90-10, limonite & marcasite ½
107½	110	Brown fossiliferous dolomitic limestone, limonite 3, marcasite 2/10 OIL - 107.5
110	112½	Brown fossiliferous dolomitic limestone, limonite (coarse) 10, limonite 1/10
112½	115	Brown dolomitic limestone, considerable buff dolomite & chert ravellings, limonite 3, specks marcasite
115	117½	Brown dolomitic limestone, gray clay & green shale 60-40, limonite 4, marcasite 1/10, some buff dolomite & chert ravellings CLAY - 116.5
117½	120	Dark brown dolomite, gray dolomitic limestone 95-5, marcasite 1/10, little buff dolomite ravellings McGREGOR - 119.9
120	122½	Gray dolomitic limestone, marcasite 1/10, limonite (ravellings) 4, some buff dolomitic ravellings
122½	125	Gray dolomitic limestone, marcasite 1/10, limonite & buff dolomitic ravellings
125	127½	Gray dolomitic limestone, trace marcasite, limonite & buff dolomitic ravellings

(Continued on next page)

Property Name: VERNA B. COLE (Tract # 2)

Total depth measured 127.5' with steel tape.
Water at 55½' from collar

Driller's remarks:

Loose bouldery dolomite & clay 13 - 25
25 - 40 Real loose
40 - 65 Fairly solid
Hit water 60 - 65
75 - 80 Loose
Drilled 8" hole to 87 feet

Land Description: Northeast 1/4 of Northwest 1/4

Location of Hole: 1000' West from Drill Hole # 5 on Hinderman

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 15

Property Name: VERNA B. COLE (Tract # 2)
Began: 10-10-52
Finished: 10-11-52
Drill Owner: John F. Robinson
Drill Runner: Glen Wallace

DEPTH From	To	DESCRIPTION
0	10	Brown clay
10	20	Buff clay
20	25	Buff clay, buff dolomite 50-50, brown chert 1
25	30	Buff dolomite, tan & gray chert 92-8
30	35	Buff dolomite, gray chert 95-5
35	40	Buff dolomite, gray chert (coarse) 90-10
40	45	Buff dolomite, gray-brown chert (coarse) 92-8
45	50	Extra coarse Cuttings: buff dolomite, brown, gray & white chert 75-25
50	55	Coarse cuttings: Buff dolomite, gray-brown chert 88-12, specks limonite
60	65	Coarse cuttings, dark brown dolomite, gray-brown & yellow chert 93-7
65	70	Coarse cuttings: dark buff dolomite, brown & tan chert 85-15
70	75	Coarse cuttings: Dark buff dolomite, brown & tan chert 88-12
75	80	Coarse cuttings: dark buff dolomite, brown & tan chert 65-35, specks limonite
80	85	Coarse cuttings: dark buff dolomite, tan chert 82-18
85	90	Fairly coarse cuttings: buff & brown-buff dolomite, tan & brown chert 93-7
90	95	Fairly coarse cuttings: dark buff & brown-buff dolomite, tan chert 94-6 GRAY - 95 ?
95	100	Coarse cuttings: dark buff dolomite, trace tan chert
100	102½	Coarse cuttings: buff dolomite & gray-buff dolomite, tan chert 1, trace red-brown clay
102½	105	Coarse cuttings: dark buff & gray-buff dolomite, tan chert 2
105	107½	Coarse cuttings: dark buff dolomite, tan chert 5
107½	110	Some extra coarse cuttings: buff dolomite, buff dolomite with dark specks 90-10, tan chert 5, trace calcite, few specks green shale BLUE - 109½
110	112½	Coarse cuttings: buff dolomite with dark brown shale, trace tan chert
112½	115	Coarse cuttings: buff dolomite, buff dolomite with dark brown shale 90-10, tan chert 2
115	117½	Coarse cuttings: dark buff dolomite with dark brown specks, green-buff clay 2, trace chert, few fossils, specks marcasite OIL - 117½ ??
117½	120	Coarse cuttings: buff dolomite, brown fossiliferous dolomitic limestone 60-40, tan chert 1, specks marcasite
120	122½	Coarse cuttings: Brown dolomitic limestone & brown clay, buff dolomite & chert ravelling, specks marcasite

(Continued on next page)

Geologist: H. R. Davis

HOLE NO. 15
Continued

Page 2

Property Name: VERNA B. COLE (Tract # 2)

From	To	
122½	125	Green clay, some buff dolomitic ravellings, specks phosphate, specks marcasite CLAY - 122½
125	127½	Bentonite, brown dolomitic limestone 60-40, buff dolomitic ravellings, marcasite 4/10 GLASS - 126½
127½	130	Coarse cuttings: buff dolomitic ravellings, brown limestone 90-10, marcasite 1/10
130	132½	Coarse cuttings: dark brown limestone, gray dolomitic limestone 90-10, buff dolomitic ravelling 15, trace marcasite McGREGOR - 132.2

Total depth 132.5' with steel tape.
Water at 56'

Land Description: Northeast ¼ of Northwest ¼

Location of Hole: 1000' West from Drill Hole # 14

Geologist: E. J. Poehlmann

DRILL RECORD

Eagle-Picher Mining & Smelting Co.

Property Name: VERNA B. COLE Tract #1
Began: 6-30-52, finished 7-1-52
Drill Owner: Swalley Estate
Drill Runner (Day): Dave Taylor

Hole No. 9
Total Depth 131
Elev._____

From	To	
0	5	Soil & gray brown & buff clay
5	10	Gray brown & buff clay
10	15	Gray brown & buff clay
15	20	Buff clay
20	25	Buff clay, some buff dolomite & tan chert, few specks limonite
25	30	Buff dolomite-brown chert 95-5, buff clay 5, brown clay 1, few specks limonite
30	40	Coarse cuttings, buff dolomite-tan chert 93-7, buff clay 5
40	50	Buff dolomite-brown & tan chert 95-5, few specks limonite
50	60	Brown buff dolomite-brown & tan chert 97-3, few specks marcasite
60	70	Buff dolomite-brown & tan chert 98-2, few specks limonite
70	80	Buff dolomite-brown & tan chert 90-10, light brown clay 5
80	90	Buff dolomite-brown & tan chert 85-15, light brown clay 1
90	95	Buff dolomite & light brown dolomite-brown & tan chert 94-6, brown clay 5, few specks limonite
95	100	Buff & light brown dolomite-brown & tan chert 93-7, gray/brown clay 20, few specks limonite
100	102½	Buff dolomite-light gray dolomite 80-20, brown chert 1, a speck limonite GRAY
102½	105	Buff dolomite & light gray dolomite, brown chert 1, a speck limonite
105	107½	Buff dolomite & light gray dolomite, buff clay 10, few specks chert
107½	110	Buff & light gray dolomite, brown chert 3, buff & gray clay 3
110	112½	Pale gray & buff dolomite, few specks white chert BLUE
112½	115	Pale gray & buff dolomite, brown & tan chert 2
115	117½	Buff dolomite, pale gray dolomite 5, brown & tan chert 11, trace buff clay, few specks limonite
117½	120	Buff dolomite, light brown dolomite 5, fossil 15, dark brown shale 5, brown clay 1, few specks limonite OIL 119
120	122½	Dark brown shale 30, gray clay 20, brown limestone 30, brown clay 10, buff dolomite & clay 10, considerable fossils, limonite & marcasite ½ CLAY
122½	125	Gray clay 70, dark brown limy shale 15, brown & buff clay 10, buff dolomite 5, limonite & marcasite 1/10
125	127½	Brown dolomitic limestone, brown, buff & gray dolomite 20, brown & gray clay 5, trace marcasite GLASS
127½	130	Brown dolomitic limestone, trace gray dolomitic limestone buff & brown dolomite 40, a speck marcasite
130	131	Gray dolmitic limestone-light brown limestone 80-20, buff & brown dolomite 30, few specks marcasite

T.D. M. 131

McGregor 130 plus/minus 1

Land Description: SE¼-NE¼ of Sec. 31 T-2-N, R-1-E of 4th P M

Location of Hole: 1000' E from DH #1 on Winderman Lease.

Geologist: E. J. Poehlmann

DRILL RECORD

Eagle-Picher Mining & Smelting Co.

Property Name: VERNA B. COLE Tract #1
Began: 7-2-52, finished 7-3-52
Drill Owner: Swalley Estate
Drill Runner (Day): Dave Taylor

Hole No. 10
Total Depth 137½
Water level 94'

Elev. _____

From	To	
0	5	Soil
5	10	Buff clay
10	20	Buff clay, coarse cuttings, buff dolomite & buff chert 20
20	35	Buff clay coarse cuttings, buff dolomite & buff chert 80
35	40	Buff clay-coarse cuttings buff dolomite & buff chert 50-50 trace limonite
40	45	Coarse cuttings, buff dolomite-brown & buff chert 90-10 limonite ½
45	50	Coarse cuttings buff dolomite-brown & buff shale 85-15
50	60	Buff dolomite-brown & tan chert 97-3, limonite & marcasite ½ few coarse cuttings
60	70	Buff dolomite-brown & tan chert 95-5, limonite & marcasite 1, few coarse cuttings
70	80	Buff dolomite-brown & tan chert 96-4, trace limonite & marcasite
80	85	Buff dolomite, few specks chert, few specks limonite
85	90	Buff dolomite, trace brown chert, few specks limonite
90	92½	Pale brown/buff dolomite, few specks limonite GRAY 92
92½	95	Gray dolomite-light brown dolomite 60-40, few specks limonite
95	97½	Light gray/brown dolomite, few specks limonite
97½	100	Gray dolomite, few specks limonite & marcasite
100	102½	Gray/brown dolomite-gray dark/speckled dolomite 80-20, few specks limonite & marcasite BLUE 102
102½	105	Gray dark/speckled dolomite, trace calcite, few specks limonite & marcasite
105	107½	Light gray dark/speckled dolomite, trace calcite, few specks limonite & marcasite
107½	110	Light gray dark/speckled dolomite-light brown dolomitic limestone 80-20, few specks limonite & marcasite OIL 109½
110	112½	Light brown & tan dolomitic limestone, trace marcasite
112½	115	Light brown & tan limestone & dolomitic limestone, trace marcasite
115	117½	Brown & tan limestone, brown shale 3, trace marcasite
117½	120	Brown & tan limestone, brown shale 10, trace marcasite
120	122½	Tan & gray/brown limestone, brown shale 10, trace marcasite
122½	125	Green shale & gray clay-black limestone-brown & gray/brown limestone 40-20-40, trace marcasite CLAY 123½
125	127½	Brown & tan fossiliferous limestone, marcasite 1/10 GLASS 125
127½	130	Brown & tan fossiliferous limestone, green & gray shale 5, marcasite 1/10
130	132½	Light brown & tan limestone, green shale 1, brown shale 2, few specks marcasite
132½	135	Brown & tan limestone, dark brown shale 10, trace green shale, few specks marcasite
135	137½	Gray dolomitic limestone-brown & tan limestone 80-20, trace green shale, few specks marcasite McGREGOR 135½

Land Description: SE¼-NE¼ of Sec 31 T-2-N R-1-E of 4th P M

Geologists: Harold L. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 15

Property Name: VERNA B. COLE (Tract #1) Total Depth 127.5
Began: 8-29-52 Finished: 8-30-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor Water Level 72.5

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	10	Brown soil & brown clay
10	15	Light brown clay
15	20	Buff clay, some dolomite & chert
20	25	Buff dolomite & buff clay, brown & tan chert 95-5
25	30	Buff dolomite & buff clay, brown & tan chert 90-10, coarse cuttings
30	35	Coarse cuttings buff dolomite & brown chert & tan chert, some buff clay
35	40	Buff dolomite, brown & tan chert 90-10 (few coarse cuttings) , some buff clay
40	50	Buff dolomite, brown & tan chert 85-15
50	60	Buff dolomite, brown & tan chert 90-10, trace limonite
60	70	Buff dolomite, tan chert 99-1, trace limonite
70	80	Buff dolomite, brown & tan chert 95-5, trace limonite
80	90	Light brown dolomite, trace brown & tan chert, trace limonite, few specks marcasite
90	95	Gray dolomite, light brown dolomite 80-20, limonite 1/10, few specks marcasite GRAY - 91
95	100	Gray dolomite & light brown dolomite, trace limonite & marcasite (fine cuttings)
100	102½	Gray dark-speckled dolomite, gray dolomite 60-40, gray clay 10, trace limonite & marcasite (fine cuttings)
102½	105	Gray, gray dark-speckled & light brown dolomites, trace limonite & marcasite (fine cuttings)
105	107½	Gray & light brown & brown dolomites, trace limonite & marcasite (fine cuttings) BLUE - 101
107½	110	Gray dark-speckled dolomite & gray clay, some brown dolomite trace marcasite & limonite (fine cuttings)
110	112½	Brown & tan dolomitic limestone & brown shale limestone, trace calcite, trace marcasite & limonite OIL - 110
112½	115	Pale brown dolomitic limestone, trace marcasite
115	117½	Light brown dolomitic limestone, trace brown limy shale, trace marcasite
117½	120	Light gray clay & green shale, light brown dolomitic limestone 80-20, trace brown shale, trace marcasite CLAY - 120
120	122½	Brown dolomitic limestone, gray clay 80-20, trace marcasite GLASS - 120½
122½	125	Brown & light brown dolomitic limestone, some brown shale, trace green shale, calcite 1, trace marcasite McGREGOR - 125
125	127½	Gray dolomitic limestone, brown dolomitic limestone 80-20, trace green shale, calcite ½, trace marcasite

Total depth measured 128.0' with steel tape.
Land Description: Southeast ¼ of Northeast ¼ of Sec. 31, Twnsp 2 North, Rng 1 East
Location of Hole: 330' East & 20' North from SW cor of SE¼ of NE ¼, Section 31

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 16 (DMRA)

Property Name: VERNA B. COLE (Tract #1)
Began: 3-3-53 Finished: 3-5-53
Drill Owner: Thomas
Drill Runner: Ray Reavis

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Brown clay
10	15	Brown clay
15	20	Dark buff clay, few specks brown chert
20	25	Buff dolomite, buff clay, gray-brown chert 46-46-8, few specks galena
25	30	Buff dolomite, buff clay, gray-brown chert 60-37-3, few specks galena
30	35	Buff dolomite, buff clay, gray-brown chert 83-10-7
35	40	Buff dolomite, gray-brown & brown chert 92-8, few specks galena
40	50	Light buff dolomite, gray-brown chert 93-7, few specks galena
50	60	Light buff dolomite, gray-brown chert 98-2, few specks galena
60	70	Light buff dolomite, gray-brown chert 99-1, few specks galena
70	75	Buff dolomite, gray-brown & brown-buff chert 91-9, trace limonite, specks galena
75	80	Brown-buff dolomite, tan & gray-brown chert 60-40, few specks limonite & marcasite
80	85	Buff dolomite, Buffish-brown & tan chert 94-6, specks limonite
85	90	Brown-buff, tan & brown-buff chert 97-3, specks limonite
90	95	Gray dolomite, trace marcasite GRAY - 90
95	97½	Gray dolomite, thin trace marcasite
97½	100	Gray dolomite, few specks marcasite
100	102½	Gray dolomite, trace marcasite
102½	105	Gray dolomite, gray dark-speckled dolomite 80-20, trace marcasite BLUE - 104½
105	110	Dark gray dark-speckled dolomite, trace marcasite
110	112½	Dark gray dark-speckled dolomite, trace marcasite
112½	115	Brown dolomitic limestone, dark gray dark-speckled dolomite 80-20, trace marcasite
115	120	Brown dolomitic limestone, trace brown shale, trace calcite, marcasite 1/10
120	125	Brown dolomitic limestone, dark brown shaly limestone 98-2 trace marcasite, specks blende
125	127½	Gray-brown dark-speckled limestone, dark gray fossiliferous limestone, green shale 60-20-20, thin trace marcasite, few specks phosphate. CHAY - 126½
127½	130	Brown dolomitic limestone, dark gray fossiliferous limestone 80-20, trace calcite, trace marcasite GLASS - 128

(Continued on next page)

Property Name: VaRAA B. COLE (Tract #1)

From	To	
130	132½	Dark brown dolomite, trace chocolate brown shale, trace marcasite
132½	135	Dark brown dolomite, trace chocolate brown shale, calcite 1, trace marcasite
135	137½	Gray dolomitic limestone, dark brown dolomite 30-40, chocolate brown shale 1, trace marcasite
137½	140	Gray dolomitic limestone, few specks marcasite

McGREGOR - 136

Total depth measured 140.4' with steel tape
Water 68'

Land Description: Northeast ¼ of Southeast ¼ of Sec. 31, Twnsp 2 North, Rng 1 East

Location of Hole: 100' North & 815' East from Drill Hole #1

A. J. Tomlinson

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 10

Property Name: HENRY C. GRAY
Began: 6-12-52 Finished: 6-16-52
Drill Owner: J. F. Robinson
Drill Runner: W. G. Webber

Total Depth 290

Collar Elev. 1034.21
Water Level 78.5'

DEPTH From	To	DESCRIPTION
0	18	Brown clay
18	30	Buff dolomite, buff clay 10, limonite 3
30	45	Buff dolomite, limonite ½
45	60	Brown-buff dolomite, trace marcasite
60	75	Light gray clay 1, light brown dolomite, few specks limonite
75	90	Light brown-buff dolomite, a speck limonite
90	105	Light brown-buff dolomite
105	120	Light brown-buff dolomite, a speck limonite
120	130	Light brown dolomite, a speck limonite & marcasite
130	135	Light brown dolomite, tan dolomite 5, few specks marcasite
135	140	Light brown dolomite, trace gray chert, tan dolomite 1, few specks marcasite
140	145	Brown dolomite, brown & tan chert 96-4, trace marcasite GRAB - 140
145	155	Brown dolomite, brown & tan chert 97-3, trace marcasite
155	165	Brown dolomite, gray chert 99-1, trace marcasite
165	175	Brown dolomite, gray dolomite, gray chert 85-14-1, trace marcasite
175	185	Brown dolomite, brown & gray chert 99-1, marcasite 1/10
185	195	Brown dolomite, brown & gray chert 94-6, trace marcasite
195	205	Brown dolomite, gray & tan chert 97-3, trace marcasite
205	215	Brown dolomite, gray & tan chert 95-5, trace marcasite
215	225	Brown dolomite, brown & tan chert 97-3, trace marcasite
225	230	Brown dolomite, brown & tan chert 98-2, trace marcasite
230	235	Brown dolomite, trace marcasite
235	240	Brown dolomite, trace marcasite
240	245	Gray dolomite, trace marcasi te GRAT - 240
245	250	Gray dolomite, few specks marcasite
250	255	Gray-brown dolomite, few specks marcasite
255	257½	Gray dark-speckled dolomite, gray-brown dolomite 80-20, trace marcasite BLUE - 255.5
257½	260	Gray dark-speckled dolomite, trace marcasite, a speck blende
260	262½	Dark gray dark-speckleddolomite, few specks marcasite
262½	265	Brown & tan fossiliferous dolomite limestone & brown shale, gray dark-speckled dolomite 80-20, trace marcasite OIL - 263
265	267½	Brown & tan fossiliferous dolomite limestone, brown shale 1, gray shale 1, trace marcasite
267½	270	Brown & tan fossiliferous limestone, brown shale 3, gray shale 1, few specks marcasite
270	275	Light brown & tan limestone, trace marcasite, a speck blende
275	277½	Brown & tan limestone, light gray-brown dark-speckled limestone 20, few specks marcasite

(Continued on next page)

Geologist: [illegible] J. [illegible]nn

HO[illegible] NO. 10
Continued

Page 2

Property Name: HENRY C. GRAY

From	To	
277½	280	Brown limestone, black fossiliferous limestone, [illegible] clay 40-40-20, green shale 5, trace marcasite CLAY -[illegible].5
280	282½	Brown & tan fossiliferous limestone, [illegible] clay [illegible], trace marcasite CLAY - [illegible]
282½	285	Brown & tan limestone, trace marcasite
285	287½	Brown & tan limestone, light gray shale [illegible], trace marcasite
287½	290	Brown & tan limestone, gray dolomite limestone -[illegible], light gray shale 1, trace marcasite McCONNELL - [illegible]

Land Description: NW[illegible] of SW[illegible] of Sec. 7 [illegible]-[illegible]-[illegible]
[illegible]-[illegible]-[illegible] of 4th P[illegible].

Location of Hole: 550' W & 130' S from NE cor of NW[illegible] of SW[illegible] of Sec. 7

Wisconsin Geologist: R. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

Property Name: HENRY C. GRAY
Began: 6-23-52, finished 6-27-52
Drill Owner: J. F. Robinson
Drill Runner (Day): Gayl Johnson

Hole No. 11
Total Depth 265
Water level 70'

Elev._____

From	To	
0	15	Brown clay, some buff dolomite
15	25	Buff dolomite, trace limonite
25	40	Buff dolomite, few specks limonite
40	70	Buff dolomite
70	85	Brown/buff dolomite, trace limonite
85	90	Brown dolomite, trace marcasite & limonite
90	100	Brown dolomite, few specks marcasite
100	110	Brown dolomite, few specks marcasite
110	115	Brown dolomite, trace tan dolomite, few specks marcasite
115	120	Brown dolomite-trace gray chert, tan dolomite 5, few specks marcasite DRAB 119
120	125	Brown dolomite-tan chert 98-2, trace tan dolomite, few specks marcasite
125	130	Brown dolomite-brown & tan chert 96-4, trace marcasite
130	140	Brown dolomite-brown & tan chert 98-2, few specks marcasite
140	150	Brown dolomite-few specks brown chert, trace gray clay, gray dolomite 1, trace marcasite, a speck blende & galena
150	160	Gray brown dolomite-brown & gray chert 97-3, few specks marcasite
160	170	Light brown dolomite-trace brown & gray chert, trace calcite, marcasite 1/10
170	180	Brown dolomite-brown & tan chert 98-2, calcite ½, marcasite 1/ a speck blende & galena
180	190	Brown dolomite-brown & tan chert 97-3, marcasite 1, few specks blende & galena
190	200	Brown dolomite (some marcasite speckled)-gray & tan chert 99-1, calcite 1, marcasite 1 (small recovery)
200	205	Brown dolomite(some marcasite speckled)-gray & tan chert 99-1, calcite 1, marcasite 1
205	210	Brown dolomite-gray & tan chert 94-6, trace calcite, marcasite ½
210	215	Brown dolomite-brown & tan chert 98-2, marcasite ½
215	217½	Brown dolomite-few specks calcite, trace marcasite
217½	220	Light brown dolomite-trace calcite, trace marcasite
220	222½	Light brown dolomite-gray dolomite 60-40, calcite 1, marcasite 1/10 GRAY 221½
222½	225	Gray dolomite, few specks calcite, trace marcasite
225	227½	Gray dolomite, marcasite 1/10
227½	230	Gray dolomite-marcasite ½
230	232½	Gray/brown dolomite, calcite ½, marcasite ½
232½	235	Gray/brown dolomite, marcasite 1
235	237½	Gray/brown dolomite, a speck gray clay, few specks calcite, marcasite 1½
237½	240	Pale gray dark/speckled dolomite-gray clay 5, brown dolomite 10, calcite ½, marcasite 1 BRN 237½
240	242½	Pale gray dark/speckled dolomite-brown dolomite 1, calcite 1/2 trace marcasite

(Continued on next page)

Property Name: HENRY C. GRAY

Hole No. 11
(Continued)

From	To	
242½	245	Pale gray dark/speckled dolomite-calcite 5, gray clay 10, brown dolomite 5, marcasite ½
245	247½	Light brown fossiliferous limestone, calcite 10, brown clay 10, brown shale 3, marcasite 2½, blende 2% OIL 245
247½	250	Light brown fossiliferous limestone, calcite 8, brown shale 4, gray clay 1, marcasite 2, blende 1½%
250	252½	Light brown fossiliferous limestone, calcite 8, gray clay 10, marcasite 2, blende 2%, (small recovery) CLAY 252
252½	255	Gray clay-light brown dolomitic limestone 80-20, light brown fossiliferous limestone, calcite 3, marcasite 3, blende 1%, a speck galena
255	257½	Dark brown dolomitic limestone, trace calcite, marcasite ½, few specks blende GLASS 254½
257½	260	Gray brown dolomitic limestone-brown dolomite 60-40, trace gray & green & dark brown shale, marcasite 2½, blende ½
260	262½	Gray/brown & gray dolomitic limestone-brown dolomitic limestone 10, green shale 3, trace calcite, marcasite ½, blende 1/10
262½	265	Gray/brown dolomitic limestone, green shale4, marcasite 1½ trace blende McGREGOR 258½

T.D.M. 267.7 w.s.t.

Signature: E. J. Boehlmann

Land Description: NW¼-SW¼ of Sec. 7 T-1-N R-1-E of 4th P M

Location of Hole: 350' N & 83' W from D H #9.

ASSAY

		%ZnS	FeS_2	PbS
245	247½	3.60	6.70	nil.
247½	250	3.95	6.90	"
250	252½	2.95	6.70	"
252½	255	2.25	7.70	"
255	257½	0.60	6.20	"
257½	260	0.75	5.40	"

Analysed by: Harold Erwin

Wisconsin

Geologist: Edwin J. Poehlmann

DRILL RECORD
Eagle Picher Mining & Smelting Co.

Property Name: HENRY C. GRAY
Began: 6-27-52, finished 7-3-52
Drill Owner: J. F. Robinson
Drill Runner (Day): Gayl Johnson

Hole No. 12
Total Depth 281'
Water level 74'

Elev._____

From	To	
0	10	Buff clay
10	20	Buff clay & buff dolomite
20	30	Buff dolomite, buff clay 10, a speck marcasite
30	40	Buff dolomite, buff clay 5
40	55	Pale brown/buff dolomite, a speck limonite
55	85	Pale brown/buff dolomite, a speck limonite
85	100	Buff & brown/buff dolomite
100	115	Buff & brown/buff dolomite, few specks limonite
115	120	Buff dolomite-brown dolomite 90-10, few specks brown chert, a speck limonite DRAB 120
120	125	Brown dolomite-brown chert 96-4, few specks limonite
125	130	Brown dolomite-brown & tan chert 95-5, few specks marcasite, few specks galena
130	140	Brown dolomite-brown & tan chert 93-7, few specks marcasite
140	150	Brown dolomite-brown & tan chert 95-5, few specks marcasite
150	160	Gray/brown dolomite-gray & tan chert 94-6, few specks marcasite
160	170	Gray/brown dolomite-gray & tan chert 99-1, a speck calcite, few specks marcasite
170	180	Light brown dolomite-gray & tan chert 97-3, trace galena, few specks marcasite
180	190	Light brown dolomite-trace calcite, marcasite ½
190	200	Light brown dolomite-few specks calcite, marcasite 1
200	210	Brown dolomite-gray & brown chert 95-5, calcite ½, marcasite 1½
210	215	Brown dolomite-gray & brown chert 98-2, marcasite 1
215	220	Brown dolomite-gray & brown chert 95-5, marcasite 1
220	222½	Brown marcasite/speckled dolomite, calcite 1, marcasite 8, small recovery
222½	225	Brown marcasite/speckled dolomite, calcite 4, marcasite 4, small recovery
225	227½	Light brown dolomite, a speck chert, marcasite ½, small recovery
227½	230	Light brown dolomite, trace brown chert, marcasite, small recovery GRAY 230
230	232½	Gray dolomite, trace calcite, trace marcasite
232½	235	Gray dolomite, calcite ½, trace marcasite
235	237½	Gray dolomite, trace brown shale, trace marcasite
237½	240	Gray dolomite, trace brown shale, trace marcasite
240	242½	Gray/brown dolomite, a speck calcite, trace marcasite
242½	245	Gray dolomite, trace gray dark/speckled dolomite, calcite ½, marcasite 1 BLUE 245
245	247½	Gray dark/speckled dolomite, trace calcite, marcasite ½, a speck galena
247½	250	Gray dark/speckled dolomite, calcite ½, marcasite ½
250	252½	Calcite-gray dark/speckled dolomite 80-20, marcasite 1½ OIL 252½
252½	255	Calcite-brown & light brown dolomitic limestone 70-30, marcasite ½
255	257½	Brown & light brown fossiliferous dolomitic limestone, calcite 5, marcasite ½, blende 2/10
257½	260	Brown & light brown fossiliferous dolomitic limestone-trace gray clay, marcasite 1, blende 9/10 CLAY 260

(Continued on next page)

Property Name: HENRY C. GRAY
Began: 6-27-52, finished 7-3-52

Hole No. 12
(Continued)

From	To	
260	262½	Gray/blue clay, brown & tan limestone 15, trace phosphate, calcite 1, trace marcasite & blende (small recovery)
262½	265	Dark brown & light brown dolomitic limestone, dark brown shale 15, green & gray shale 5, trace gray clay, marcasite 4, blende [illegible], (small recovery)
265	267½	Brown & dark brown dolomitic limestone, marcasite 3½, blende 2% (small recovery)
267½	270	Brown & dark brown limestone & dolomitic limestone, trace gray dolomitic limestone, considerable gray dolomite, marcasite 3, blende 1½% (small recovery)
270	272½	Dark brown to light brown dolomitic limestone, green & brown shale 5, dark brown shale 8, calcite 4, marcasite 8, blende 3½%
272½	275	Brown & light brown limestone, gray/blue shale 10, brown shale 5, marcasite 4, blende [illegible]%
275	277½	Light gray dolomitic limestone-light brown & brown dolomitic limestone 80-20, gray/blue shale 10, light brown shale 5, marcasite 2, blende 2/10
277½	280	Light gray dolomitic limestone-brown dolomitic limestone 70-30, gray/blue shale 15, light brown shale 3, marcasite 4, blende 2%
280	281	Light gray dolomitic limestone, glassrock & blue shale, marcasite 2, blende 1½% McGREGOR 275 ???

T.D.H. 281.0' w.s.t.

Glassrock & Clay beds are caving badly into the bottom of the hole, possibly carrying the values of Blende & marcasite with them. Position of McGREGOR is not certain.

ASSAY

		ZnS	FeS_2	Pbs
257½	260	1.55	4.50	nil.
260	262½	1.00	5.60	"
262½	265	0.50	8.40	"
265	267½	1.20	7.50	"
267½	270	1.05	9.40	"
270	272½	1.15	8.80	"
272½	275	0.75	7.70	"
275	277½	0.75	4.10	"
277½	280	0.95	6.90	"
280	282½	0.80	9.50	"

DRILL RECORD

The Eagle-Picher Company--Mining & Smelting Division

Property Name: HENRY GRAY — Hole No. 13
Began: 7-8-52, finished 7-11-52 — Total Depth 270'
Drill Owner: J. F. Robinson
Drill Runner: Gayl Johnson — Elev._____

From	To	
0	15	Buff clay
15	30	Buff dolomite
30	45	Buff dolomite
45	95	Light brown dolomite
95	100	Brown dolomite, a speck marcasite
100	110	Brown dolomite, trace tan dolomite, few specks marcasite
110	115	Brown dolomite, tan dolomite 3, few specks marcasite
115	120	Brown dolomite, a speck tan chert, tan dolomite 1, few specks marcasite DRAB 120
120	125	Brown dolomite-gray & tan chert 95-5, few specks marcasite
125	130	Brown dolomite-gray & tan chert 94-6, few specks marcasite, a speck tan dolomite
130	140	Brown dolomite-gray & tan chert 96-4, few specks marcasite
140	150	Brown dolomite-tan chert 97-3, few specks marcasite
150	160	Light brown & gray dolomite-tan chert 99-1, few specks marcasite
160	170	Brown & gray dolomite, gray shale 2, trace marcasite, thin trace galena
170	180	Light brown dolomite, gray limy shale 15, marcasite 1/10, tracegalena, few specks blende (some marcasite/speckled dolomite)
180	185	Small recovery, few coarse cuttings, brown & gray marcasite/speckled dolomite, trace chert, marcasite 1/10
185	190	Light brown dolomite, trace tan chert, few specks calcite, marcasite 1/10, few specks blende & galena
190	195	Small recovery, few coarse cuttings, brown dolomite & gray chert (some marcasite/speckled), trace marcasite
195	200	Light brown dolomite, trace tan chert, marcasite 1/10, few specks blende & galena
200	210	Brown dolomite-gray & tan chert 97-3, trace calcite, marcasite 10, few specks blende & galena
210	215	Brown dolomite-gray & brown chert 94-6, calcite ½, marcasite 9, few specks blende & galena
215	220	Light brown dolomite-brown & gray chert 98-2, trace calcite, marcasite 5
220	222½	Light brown dolomite-trace tan chert, few specks calcite, marcasite 1½
222½	225	Light brown dolomite-trace calcite, marcasite 1 GRAY 225!
225	227½	Gray dolomite-trace calcite, marcasite ½
227½	230	Gray dolomite-few specks calcite, marcasite 1/2
230	232½	Gray dolomite & gray/brown dolomite, marcasite ½
232½	235	Very small recovery, coarse cuttings of gray marcasite/speckled dolomite, marcasite 9
235	237½	Small recovery, dark gray/brown marcasite/speckled dolomite, marcasite 10
237½	240	Small recovery, dark gray/brown dolomite, marcasite 7½, (few coarse cuttings)
240	242½	Small recovery, dark gray/brown dolomite-gray dark/speckled dolomite & clay 80-20 BLUE 242

(Continued on reverse side)

Property Name: HENRY C. GRAY

Hole No. 13
(Continued)

From	To	
242½	245	Gray dark/speckled & dark gray/brown dolomite, trace gray clay, marcasite 1½
245	247½	Gray dark/speckled dolomite, marcasite ½
247½	250	Gray dark/speckled dolomite, marcasite 1½, a speck blende
250	252½	Gray dark/speckled dolomite-brown dolomitic limestone 60-40, marcasite 4, blende 1½% OIL 251½
252½	255	Brown & tan dolomitic limestone "blue" ravellings 35, marcasite 3½, blende 1%
255	257½	Brown & tan limestone-gray clay 60-40, marcasite 10, blende 4% CLAY 256½
257½	260	Brown & tan dolomitic limestone-gray clay 80-20, trace phosphate, considerable "blue" ravellings, marcasite 9, blende 4½% GLASS 258
260	262½	Dark brown dolomitic limestone "blue & gray" ravellings 40, marcasite 15, blende 2%
262½	265	Gray dolomitic limestone-brown dolomitic limestone 80-20, light gray clay 1, considerable "gray" ravellings, marcasite 6, blende ½ McGREGOR 263
265	266	Gray dolomitic limestone-brown dolomitic limestone 80-20, light gray clay 1, marcasite 8, blende 4/10
266	268	Gray dolomitic limestone-gray clay 96-4, trace calcite "blue & gray" ravellings 50, brown dolomitic limestone 5, marcasite 9, blende ½
268	270	Gray dolomitic limestone-"blue & gray" ravellings 50, brown dolomitic limestone 3, marcasite 5, blende 2%

T.D.M. 269.9' w.s.t.

Signature: Edwin F. Poehlmann

Land Description: NW¼-SW¼ of Sec. 7 T-1-N R-1-E of 4th P M

Location of Hole: S 65 degrees E 75' from D H #11.

		ASSAY ZnS	FeS_2	PbS
250	252½	1.55	9.90	nil.
252½	255	1.20	10.30	"
255	257½	4.00	10.50	"
257½	260	4.20	8.00	"
260	262½	2.30	10.10	"
262½	265	1.15	8.40	"
265	266	1.80	9.30	"
266	268	1.00	10.30	"
268	270	1.10	12.00	"

Geologist R. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 14

Property Name: HENRY C. GRAY
Began: 7-12-52 Finished: 7-19-52
Drill Owner: J. F. Robinson
Drill Runner: Gayl Johnson

Total Depth 286

DEPTH From	To	DESCRIPTION
0	5	Brown soil
5	20	Brown & buff clay, some buff dolomite
20	35	Buff dolomite, some buff clay, trace marcasite & limonite
35	50	Buff dolomite, few specks marcasite & limonite
50	65	Pale buff dolomite, a speck marcasite
65	80	Light brown-buff dolomite, a speck marcasite
80	95	Light brown-buff dolomite, a speck marcasite, a speck limonite
95	110	Pale brown & brown-buff dolomite, a speck limonite
110	125	Pale brown & brown-buff dolomite, a speck limonite
125	140	Pale brown & brown-buff dolomite, trace tan chert, few specks marcasite
140	145	Light brown dolomite, tan chert 97-3, few specks marcasite DRAB - 140
145	150	Light brown dolomite, gray & tan chert 96-4, few specks marcasite
150	160	Light brown dolomite, brown & tan chert 99-1, few specks marcasite
160	170	Light brown dolomite, tan chert 98-2, a speck marcasite
170	180	Light brown dolomite, gray & tan chert 97-3, few specks marcasite
180	190	Pale brown dolomite, brown & tan chert 98-2, a speck marcasite
190	200	Pale brown dolomite, trace tan chert, few specks marcasite
200	210	Pale brown dolomite, a speck tan chert, thin trace marcasite
210	220	Light brown dolomite, brown & tan chert 97-3, trace marcasite
220	230	Light brown dolomite, brown & tan chert 98-2, thin trace marcasite
230	235	Brown dolomite, brown & tan chert 98-2, thin trace marcasite
235	240	Pale brown dolomite, pale gray chert 99-1, few specks marcasite
240	245	Pale brown dolomite, gray-brown dolomite 80-20, few specks marcasite GRAY - 244
245	247½	Pale gray-brown dolomite, few specks marcasite
247½	250	Pale gray-brown dolomite, few specks marcasite
250	252½	Gray-brown dolomite, thin trace marcasite
252½	255	Gray-brown dolomite, gray dark-speckled dolomite 60-40, few specks marcasite BLUE - 254
255	257½	Dark gray-brown speckled dolomite, a speck marcasite
257½	260	Brown & tan fossiliferous dolomite limestone, dark gray-brown dolomite 80-20, few specks marcasite OIL - 258
260	262½	Brown & tan fossiliferous limestone, few specks marcasite
262½	265	Brown & tan limestone, few specks marcasite

(Continued on next page)

Property Name: HENRY C. GRAY

From	To	
265	267½	Tan limestone, dark brown shaly limestone 15, few specks marcasite
267½	270	Light tan & dark brown limestone, few specks marcasite
270	272½	Gray sticky clay, light tan limestone 20, black fossiliferous limestone 10, green shale 10, few specks marcasite
272½	275	Gray sticky clay, brown limestone 20, black limestone 15, few specks marcasite
275	277½	Light brown & gray-brown limestone, dark brown shale 1, green shale 1, few specks marcasite CLAY - 270.5
277½	280	Light brown limestone, green shale 1, few specks marcasite GLASS - 274.5
280	282½	Light brown limestone, dark brown shale 5, trace green shale, few specks marcasite
282½	285	Gray dolomite limestone, light brown limestone 80-20, green shale 2, few specks marcasite
285	286	Gray dolomite limestone, coarse cuttings green shale 30, few specks marcasite

Total depth measured 286.0' with steel tape.

Land Description: SW¼ of NW¼ of Sec. 7 T-1-N R-1-E of 4th PM

Location of Hole: 370' N & 260' E of SW corner of SW¼/NW¼-Sec 7

Geologist: Harold S. Davis

Gam

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 18

Property Name: HENRY C. GRAY
Began: 1-3-53 Finished: 1-8-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Elev. 1021.26

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Brown clay
10	15	Buff clay, phosphate 3
15	20	Dark buff limonite-speckled dolomite, few specks marcasite
20	30	Buff dolomite, trace limonite (Coarse cuttings)
30	40	Buff dolomite, a speck limonite & marcasite
40	50	Buff dolomite
50	60	Buff dolomite
60	70	Buff dolomite
70	80	Brown-buff dolomite
80	90	Buff & dark buff dolomite
90	100	Brown-buff dolomite
100	110	Buffish-brown dolomite
110	120	Buffish-brown dolomite, pale brown dolomite 90-10, trace calcite, a speck marcasite
120	125	Buffish-brown dolomite & brown dolomite, brown, tan & gray chert 98-2, few specks marcasite DRAB - 123
125	130	Buff dolomite, brown dolomite, gray-brown chert 90-7-3, few specks marcasite
130	140	Dark buff & brown-buff dolomite, brown chert 60-37-3, few specks marcasite
140	150	Brown dolomite, buff dolomite, gray-brown chert 60-33-7, few specks marcasite
150	160	Gray-brown dolomite, gray chert 92-8, trace marcasite
160	170	Gray-brown dolomite, gray chert 99-1, marcasite 1/10
170	180	Gray-brown dolomite, gray chert 90-10, marcasite 2/10
180	190	Brown dolomite, tan & gray chert 85-15, marcasite 4/10
190	200	Brown dolomite, tan chert 99-1, buff dolomite 1, marcasite 2/10
200	210	Brown dolomite, tan chert 94-6, marcasite 2/10
210	220	Brown dolomite, tan & brown chert 88-12, marcasite 1/10
220	225	Brown dolomite, tan chert 98-2, marcasite 1/10
225	227½	Brown dolomite, (fine cuttings), marcasite 1/10 GRAY - 229
227½	230	Brown dolomite, gray dolomite 60-40, marcasite 1/10
230	240	Gray & brown-gray dolomite, trace marcasite
240	242½	Brown-gray dolomite, trace marcasite
242½	245	Gray dark-speckled dolomite, brown-gray dolomite 60-40, trace gray clay, marcasite 1/10 BLUE - 243½
245	250	Gray dark-speckled dolomite, trace calcite, marcasite 1/10
250	252½	Gray dark-speckled dolomite, trace calcite, marcasite 1/10
252½	255	Light brown fossiliferous limestone, trace brown shale, trace marcasite OIL - 252½
255	260	Brown limestone (few fossils), dark brown shaly limestone 99-1, trace marcasite
260	262½	Brown limestone, gray fossiliferous limestone 80-20, trace dark brown shaly limestone, trace marcasite

(Continued on next page)

Property Name: HENRY C. GRAY

From	To	
262½	265	Gray-brown dark-speckled limestone, gray fossiliferous limestone 80-20, trace marcasite CLAY - 264.5
265	267½	Dark gray fossiliferous limestone & green shale, light brown limestone 4, trace marcasite
267½	270	Light brown limestone, dark gray fossiliferous limestone 90-10, trace marcasite GLASS - 267.8
270	272½	Brown & tan limestone, trace dark brown shale, marcasite 2/10
272½	275	Brown & tan limestone, trace dark brown shale, trace marcasite
275	277½	Dark brown limestone, dark brown shale 99-1, trace marcasite
277½	280	Gray dolomitic limestone, dark brown limestone 98-2, trace dark brown shale, trace marcasite McGREGOR - 277½

Total depth measured 280.2' with steel tape.
Water at 81'.

NOTE: No remarks of particular interest on driller's log.

Land Description: Northwest ¼ of Southwest ¼

Location of Hole: 285' South & 345' West from Northeast corner of 40 Acres described above.

Geologist: Harold N. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 16

Property Name: HENRY C. GRAY
Began: 1-8-53 Finished: 1-13-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Elev. Approx. 1015.7

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Brown clay
10	15	Buff clay, buff dolomite 60-40, trace phosphate & limonite
15	20	Buff dolomite, buff & brown clay 60-40, trace phosphate
20	30	Buff dolomite (coarse cuttings)
30	40	Buff dolomite, a speck limonite
40	50	Buff dolomite
50	60	Buff dolomite, a speck limonite (coarse cuttings at 55 - 60)
60	70	Buff dolomite, few specks limonite
70	80	Buff & dark buff dolomite, few specks limonite
80	90	Buff dolomite (Fairly Coarse Cuttings), few specks limonite
90	95	Buff dolomite, a speck limonite
95	100	Brown-buff dolomite
100	115	Brown dolomite, few specks marcasite DRAB - 117½
115	120	Brown dolomite, brown chert 95-5, marcasite 1/10
120	130	Brown dolomite, brown & gray-brown chert 90-10, marcasite 1/10, few specks galena
130	140	Brown dolomite, brown & tan chert 97-3, few specks marcasite
140	150	Brown dolomite, gray-brown chert 99-1, marcasite 3/10
150	160	Brown-gray dolomite, gray chert 92-8, marcasite 2/10
160	170	Brown-gray dolomite, gray chert 96-4, marcasite 1/10
170	180	Gray-brown dolomite, gray chert 98-2, marcasite 5/10
180	190	Light brown dolomite, tan & gray chert 92-8, marcasite 3/10
190	200	Brown dolomite, trace gray shale, few specks gray chert, marcasite 4/10
200	210	Brown dolomite, tan & brown chert 93-7, trace gray shale, marcasite 2/10
210	215	Brown dolomite, brown & tan chert 82-18, marcasite 1/10
215	220	Brown dolomite, brown chert 99-1, few specks calcite, trace marcasite
220	222½	Brown dolomite, brown chert 98-2, few specks calcite, marcasite 1/10
222½	225	Brown-gray dolomite, trace marcasite GRAY - 222½
225	230	Brown-gray dolomite, trace gray shale, trace marcasite
230	235	Gray-brown dolomite, trace gray shale, marcasite 1/10
235	237½	Brown-gray dolomite, trace green shale, few specks calcite, trace marcasite
237½	240	Gray dark-speckled dolomite, brown dolomite 95-5, trace calcite, thin trace marcasite BLUE - 237.6
240	242½	Gray dark-speckled dolomite, calcite, I, marcasite 1/10
242½	245	Dark gray dark-speckled dolomite, trace calcite, trace marcasite, few specks green shale OIL - 245.2
245	247½	Brown limestone, gray dark-speckled dolomite, dark brown shaly limestone 90-8-2, trace green shale, marcasite 2/10

(Continued on next page)

Property Name: HENRY C. GRAY

From	To	
247½	250	Brown & tan fossiliferous limestone, dark brown shaly limestone 99-1, trace green shale, trace marcasite
250	255	Light brown limestone, dark brown shaly limestone 96-4, marcasite 1/10
255	257½	Brown & tan limestone, dark brown shaly limestone 98-2, marcasite 1/10
257½	260	Brown limestone & light gray-brown dark-speckled limestone, dark gray fossiliferous limestone & green shale 80-20, marcasite 1/10 CLAY - 259½
260	262½	Dark gray fossiliferous limestone, brown limestone 60-40, marcasite 2/10 GLASS - 261½
262½	265	Brown limestone, dark gray fossiliferous limestone revellings 97-3, trace dark brown shale, marcasite 1/10
265	267½	Brown limestone, trace marcasite, dark gray fossiliferous limestone revellings 1
267½	270	Dark brown limestone, chocolate brown shale 98-2, marcasite 1/10 (Coarse cuttings)
270	272½	Dark brown limestone, chocolate brown shale 98-2, light gray limestone 3, trace marcasite
272½	274	Gray dolomitic limestone, dark brown limestone 90-10, chocolate brown shale 1, trace marcasite McGRAGOR - 272.8

Total depth measured 274.6' with steel tape
Water at 82'

NOTE: Driller picked clay bed at 259½ to 263.
Nothing unusual about this hole.

Land Description: Northwest ¼ of Southwest ¼

Location of Hole: 100' South from Drill Hole #15.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 17

Property Name: HENRY C. GRAY
Began: 1-13-53 Finished: 1-17-53
Drill Owner: J. F. Robinson
Drill Runner: L. J. Brown

DEPTH From	To	DESCRIPTION
0	15	Brown clay
15	20	Buff clay, few coarse chips red residual chert
20	25	Buff dolomite, buff clay 60-40, trace limonite, specks red chert
25	30	Buff dolomite, buff & red chert 97-3
30	40	Buff dolomite
40	55	Buff dolomite
55	65	Brown-buff dolomite
65	80	Buff calcareous dolomite
80	90	Buff dolomite
90	100	Buff dolomite
100	110	Rather dark buff dolomite
110	115	Brown dolomite
115	120	Brown dolomite, few specks marcasite
120	125	Brown & dark buff dolomite, brown & gray-brown chert 97-3, few specks marcasite DRAB - 122½
125	135	Brown dolomite, gray-brown chert 92-8, marcasite 2/10
135	150	Brown dolomite, gray-brown & marcasite-speckled chert 93-7, marcasite 3/10
150	165	Gray-brown dolomite, gray-brown chert 92-8, marcasite 5/10
165	180	Gray-brown dolomite, gray chert (some slightly marcasite-speckled) 91-9, marcasite 3/10
180	190	Brown dolomite, tan & gray-brown chert 98-2, marcasite 2/10
190	195	Very Small Recovery: Brown dolomite, gray chert 96-4, buffish-brown clay 1, marcasite 1
195	200	Dark brown dolomite, a speck gray chert, marcasite 1/10
200	210	Dark brown dolomite, gray-brown chert 95-5, marcasite 1/10
210	215	Brown dolomite, gray-brown chert 88-12, trace marcasite
215	220	Brown dolomite, trace brown chert, calcite 1, marcasite 2/10
220	225	Brown-gray dolomite, brown dolomite 80-20, trace marcasite GRAY - 221
225	230	Brown-gray dolomite, (rather coarse cuttings), marcasite 1/10
230	232½	No Recovery
232½	235	Gray-brown dolomite, green shale ½, marcasite 1/10
235	237½	Brown-gray dolomite, green shale ½, trace marcasite
237½	240	Gray dark-speckled dolomite, gray dolomite 60-40, trace green shale & gray clay, trace calcite marcasite BLUE - 238½
240	242½	Gray dark-speckled dolomite, trace green shale, marcasite 1/10
242½	245	Dark gray dark-speckled dolomite, trace marcasite
245	247½	Gray dark-speckled dolomite, trace green shale, trace calcite, marcasite 1/10 OIL - 247½
247½	250	Brown & gray-brown fossiliferous limestone, trace marcasite
250	252½	Brown & tan fossiliferous limestone, green shale, brown shale 97-2-1, trace marcasite
252½	255	Brown & tan limestone, dark brown shaly limestone 98-2, marcasite 1/10

(Continued on next page)

Property Name: HENRY C. GRAY

From	To	
255	257½	Brown & tan limestone, dark brown shaly limestone 96-4, trace green shale, marcasite 1/10
257½	260	Gray fossiliferous limestone, brown limestone 60-40, trace marcasite
260	262½	Green clay, dark gray fossiliferous limestone, brown limestone 60-20-20, trace marcasite CLAY - 260½
262½	265	Brown limestone, dark gray fossiliferous limestone 80-20, trace marcasite
265	267½	Brown limestone, dark brown dolomitic limestone 97-3, trace marcasite
267½	270	Brown limestone, chocolate brown shale 99-1, trace marcasite
270	272½	Brown limestone, gray limestone, chocolate brown shale 88-10-2, trace marcasite
272½	275	Gray dolomite limestone, trace marcasite MacGREGOR - 272.3

Total depth measured 275.5' with steel tape.
Water 63½'

Driller's remarks:
0 - 14 Clay
14 - 20 Boulders
120 - 125 First flint
190 -195 Lost most of cuttings
230 -232½ Soft streak & strong water -lost cuttings
237½-240 Soft
261 -264 Claybed
6½" hole

Land Description: Northwest ¼ of Southwest ¼

Location of Hole: South 45° East 150' from Drill Hole #16

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 18

Property Name: HENRY C. ~~Clay~~ Gray
Began: 1-17-53 Finished: 1-22-53
Drill Owner: John P. Robinson
Drill Runner: L. J. Brown

Elev. Approx. 1003.8

DEPTH From	To	DESCRIPTION
0	5	Buffish-brown clay soil
5	10	Buff dolomite (slightly limonite-speckled)
10	15	Buff dolomite, few specks limonite
15	25	Buff dolomite, few specks limonite (Coarse cuttings)
25	35	Buff dolomite, limonite 1/10
35	45	Buff dolomite, trace limonite (Rather Coarse Cuttings)
45	50	Buff dolomite, limonite ½
50	60	Buff dolomite, trace limonite (Rather Coarse Cuttings)
60	70	Buff dolomite, few specks limonite
70	80	Buff dolomite, & brown-buff dolomite
80	90	Buffish-brown dolomite, a speck marcasite
90	100	Buffish-brown dolomite, trace marcasite
100	105	Brown dolomite, thin trace marcasite
105	110	Brown dolomite, thin trace marcasite DRAB - 112
110	115	Small Recovery: Brown dolomite, gray chert 92-8, (few Coarse Cuttings), marcasite 1/10
115	120	Brown dolomite, gray chert 88-12, marcasite 3/10
120	130	Brown dolomite, gray-brown chert 93-7, marcasite 5/10
130	140	Brown dolomite, gray chert 97-3, marcasite 6/10
140	150	Gray-brown dolomite, gray chert 96-5, marcasite 4/10, a speck blende
150	160	Gray-brown & gray dolomite, gray chert 92-8, marcasite 2/10, a speck blende
160	165	Small Recovery: Gray-brown & gray dolomite, trace dark brown shale, marcasite 1, a speck blende
165	175	Gray-brown & gray dolomite, tan chert 94-6, marcasite 8/10, few specks blende
175	185	Light brown dolomite, trace tan chert, calcite 3, marcasite 4/10
185	190	Brown dolomite, a speck tan chert, calcite 1, trace marcasite
190	195	No Recovery
195	200	Small Recovery: & Fine Cuttings: Brown dolomite, trace calcite, marcasite 2/10
200	205	No Recovery
205	210	Small Recovery: Brown dolomite, trace light brown chert, trace marcasite
210	215	Small Recovery: Brown dolomite, few specks tan chert, trace marcasite
215	217½	Small Recovery: Brown dolomite, few specks calcite, marcasite 3/10
217½	220	Small Recovery: Mostly Fine Cuttings & Few Coarse Cuttings: gray dolomite, marcasite ½ GRAY - 217½
220	222½	Gray dolomite, marcasite 7
222½	225	No Recovery

(Continued on next page)

Property Name: HENRY C. ~~GRAY~~ Gray

From	To	
225	227½	Practically no recovery, only 4 coarse pebbles of gray dolomite
227½	230	Very Small Recovery: Brown-gray dolomite, trace green shale, marcasite ½
230	232½	Very Small Recovery: Brown-gray dolomite, marcasite 4/10
232½	235	Practically No Recovery: Only a teaspoonful of brown-gray dolomite
235	237½	Gray dark-speckled dolomite, marcasite 8 BLUE - 235
237½	240	Gray dark-speckled dolomite, marcasite 7
240	242½	Gray dark-speckled dolomite, marcasite 6
242½	245	Gray dark-speckled dolomite, marcasite 2
245	247½	Gray dark-speckled dolomite, marcasite 2, a speck blende (Coarse Cuttings)
247½	250	Gray dark-speckled dolomite, few specks brown shale & brown fossiliferous limestone, marcasite 3, few specks blende
250	252½	Brown fossiliferous dolomitic limestone, considerable ravelling from "BLUE & GRAY" (Coarse Cuttings), marcasite 5, few coarse specks blende, some brown mud washed out of sample easily) OILROCK - 250
252½	255	Same as 250 - 252½ except marcasite 7 & a trace green clay
255	257½	Same as 250 - 252½ except marcasite 8 & blende 2/10 CLAY ???????
257½	260	Extra Coarse Ravelling From BLUE & GRAY - few specks brown (Glassrock) dolomite, trace green clay, marcasite 5, blende 1/10, trace calcite
260	262½	Practically entire sample is BLUE & GRAY ravellings, few specks brown dolomite & few specks gray dolomitic limestone (McGREGOR), marcasite 7, blende 2/10 (McGREGOR - 261?)

Total depth measured 262.5' with steel tape.
Water at 71'
Remarks: This hole was very loose & fractured in the lower section. I saw some material in the last cut that I called McGregor; however, with the major portion of the sample ravellings, the McGregor "top" is uncertain. H.A.D.

Driller's Log

0	7	Soil & clay
7	15	Yellow lime boulders
15	80	Yellow lime
80	110	Brown lime
110	115	Brown lime, gray & brown flint; ribby - lost most cuttings
115	145	Brown lime, gray & brown flint; strong water
145	155	Brown & gray lime; strong water - lost most cuttings
155	160	Brown lime & gray lime, brown flint
160	165	Brown lime & gray lime, strong water, lost most cuttings
165	175	Brown lime & gray lime, brown flint & sundic
175	185	Brown lime & gray lime, brown flint & lost most cuttings
185	190	Brown lime & brown flint, tiff

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Geologist: Harold A. Davis

HOLE No. 18
Continued

Property Name: HENRY C. ~~Hay~~ Gray

From	To	Driller's Log (Continued
190	195	Lost cuttings; hit opening 190½ to 192 & 194 to 195½
195	200	Brown lime & flint; lost most cuttings - ribby
200	205	Lost cuttings (broken ground)
205	215	Brown lime, lost most cuttings, Ribby
215	222½	Brown lime, lost most cuttings (loose broken ground)
222½	225	Lost cuttings (broken ground)
225	227½	Lost cuttings (boulders)
227½	232½	Brown & gray lime, lost most cuttings, Hard 229 - 235
232½	235	Lost cuttings - Hard
235	237½	Blue & brown lime & mundic (loose ground)
237½	245	Blue lime, mundic, loose ground
245	247½	Blue lime & dark brown lime, mundic, loose ground
247½	252½	Blue lime & dark brown lime, mundic, loose ground, specks zinc
252½	255	Blue lime & dark brown lime, mundic, green clay
255	257½	Blue lime & dark brown lime, mundic, gray clay
257½	262½	Blue lime & dark brown lime

6½" hole

by L. J. Brown - Driller

Land Description: Northwest ¼ of Southwest ¼

Location of Hole: 150' East from Drill Hole #13

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 19

Property Name: HENRY C. GRAY
Began: 1-23-53 Finished: 1-27-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Total Depth 237.5

Water Level 44'

97½
220
756½

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	13	Brown-buff clay
13	20	Coarse cuttings: Buff dolomite, brown-buff clay 95-5, trace marcasite, a speck blende
20	35	Coarse cuttings: Buff dolomite, a speck marcasite
35	45	Coarse cuttings: Buff dolomite
45	50	Dark buff dolomite
50	65	Brown-buff dolomite
65	75	Buff-brown dolomite
75	80	Dark buff dolomite
80	85	Buff-brown dolomite, a speck marcasite
85	90	Brown dolomite, few specks calcite, a speck marcasite
90	95	Brown dolomite, thin trace marcasite DRAB - 97½
95	100	Brown dolomite, tan & brown chert 93-7, trace marcasite
100	110	Brown dolomite, tan & gray chert 95-5, thin trace marcasite
110	125	Brown dolomite, gray, tan & brown chert 92-8, marcasite 1/10
125	140	Gray-brown dolomite, gray chert 95-5, marcasite 4/10, thin trace galena (galena at 135-140)
140	145	Brown dolomite, gray chert 91-9, marcasite 3/10
145	150	Brown-gray dolomite, marcasite 2/10, few specks blende & galena
150	160	Brown dolomite, gray & tan chert 94-6, few specks calcite, marcasite 6/10, few specks blende & galena
160	165	Brown dolomite, tan chert 95-5, marcasite 4, trace galena, few specks blende
165	170	Brown marcasite-speckled dolomite, trace calcite, marcasite 18, a speck blende
170	175	Brown dolomite, gray & marcasite-speckled chert 85-15, calcite 1, marcasite 12, trace blende
175	180	Brown dolomite, gray chert 82-18, calcite 1, marcasite 22
180	185	Brown dolomite, gray-brown chert 95-5, calcite ½, marcasite 6
185	190	Brown dolomite, calcite 1, marcasite 5, few specks galena
190	195	Gray dolomite, brown dolomite 80-20, marcasite 3, thin trace galena GRAY - 191
195	197½	Gray dolomite, marcasite 1½
197½	200	Gray & brown-gray dolomite, little brown clay, calcite 2, marcasite 5
200	202½	Brown-gray & gray marcasite-speckled dolomite, calcite 2, trace brown clay, marcasite 7
202½	205	Brown-gray dolomite, calcite 2, marcasite 2
205	207½	Brown-gray dolomite, trace calcite, marcasite 5
207½	210	Brown-gray dolomite, trace white clay, calcite 2, marcasite 5
210	212½	Brown-gray dolomite, gray dark-speckled dolomite 50-50, calcite 20, trace light gray clay, marcasite 3

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Property Name: HENRY C. GRAY

From	To	
		BLUE - 211.25
212½	215	Gray dark-speckled dolomite, calcite 5, marcasite 4
215	217½	Dark gray dark-speckled dolomite, calcite 1, marcasite 3
217½	220	Gray dark-speckled dolomite, calcite 3, marcasite 2
220	222½	Light brown fossiliferous dolomitic limestone, calcite 2, marcasite 4, blende 2 OIL - 220
222½	225	Light brown fossiliferous dolomitic limestone, trace green shale & trace brown shale, trace calcite, marcasite 3, blende 2
225	227½	Light brown fossiliferous dolomitic limestone, trace brown shale, trace calcite, marcasite 2, blende 3
227½	230	Light brown fossiliferous limestone, green clay 80-20, trace brown shale, marcasite 1, blende 1 CLAY - 229.5
230	232½	Light gray clay (bentonite)
232½	235	Dark brown limestone & dolomitic limestone, bentonite 60-40
235	237½	Gray dolomitic limestone, dark brown limestone & chocolate brown shale 80-20, marcasite 3/10, blende 1/10
		Total depth 238.5 McGREGOR - 235.5
		Water at 44'
		Driller's remarks:
		Strong flow of water at 155 to 180; lost most of cuts.
		Soft ground 212½ to 229
		Claybed at 229 to 234
		6½ inch hole

Land Description: Southwest ¼ of Southwest ¼

Location of Hole: Approximately 275' West from Drill Hole #4

ASSAY

	ZnS	FeS_2	PbS
165-170	0.20	13.30	nil.
170-175	0.20	16.60	"
175-180	0.25	21.30	"
220-222½	3.95	10.10	"
222½-225	2.50	5.20	"
225-227½	3.75	5.20	"
227½-230	3.30	4.70	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 20

Property Name: HENRY C. GRAY
Began: 1-27-53 Finished: 1-30-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

Total Depth 240.0
Elev. Approx. 978.8*
Water Level 48.0

DEPTH From	To	DESCRIPTION
0	6	Black soil
6	10	Buff dolomite
10	30	Buff dolomite (Rather coarse cuttings)
30	50	Rather dark buff dolomite (Fairly coarse cuttings)
50	70	Buff dolomite
70	75	Buffish-brown dolomite & buff dolomite 95-5, a speck marcasite
75	80	Brown dolomite, buff dolomite, 85-15, a speck marcasite
80	90	Brown-buff dolomite, few specks calcite, thin trace marcasite
90	95	Brown dolomite, trace calcite, trace marcasite
95	100	Brown dolomite, trace gray dolomite, trace calcite, trace marcasite
100	105	Brown dolomite, gray-brown & brown chert 97-3, trace marcasite DRAB - 102½
105	110	Brown dolomite, gray & tan chert 93-7, marcasite 1/10
110	120	Brown dolomite, tan & gray chert 92-8, marcasite 1/10
120	135	Gray-brown dolomite, gray chert 96-4, marcasite 1/10
135	150	Gray-brown dolomite, gray & marcasite-speckled chert 90-10, marcasite 2/10
150	160	Brown dolomite, gray & gray-brown chert 95-5, trace calcite, marcasite 4/10
160	170	Brown dolomite, gray chert 99-1, calcite, trace buff dolomite, marcasite ½, few specks galena
170	175	Fine cuttings: Brown dolomite, trace gray chert, trace calcite, marcasite 2
175	180	Small recovery: Brown dolomite, gray chert & marcasite-speckled chert 93-7, marcasite 3
180	190	Small recovery: Brown dolomite, marcasite-speckled chert 85-15, marcasite 2
190	195	Brown dolomite, calcite 1, marcasite 1
195	200	Brown dolomite, calcite 1, marcasite 1½
200	202½	Gray dolomite, trace brown dolomite, trace calcite, marcasite 7/10 GRAY - 202½
202½	205	Gray dolomite, few specks calcite, marcasite 4/10
205	207½	Gray dolomite, calcite 2, marcasite 3/10
207½	210	Small recovery: Gray-brown dolomite, few specks gray chert, calcite 8, marcasite 4
210	212½	Small recovery: Gray-brown dolomite, calcite 4, marcasite 8
212½	215	Gray-brown dolomite, few specks gray chert, calcite 2, marcasite 2
215	217½	Gray-brown dolomite, calcite 20, marcasite 3
217½	220	Gray-dark-speckled dolomite, gray-brown dolomite 90-10, calcite 2, marcasite 4 BLUE - 217.7

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Property Name: HENRY C. GRAY

From	To	
2.0	222½	Gray dark-speckled dolomite, calcite 2, marcasite 5
222½	225	Gray dark-speckled dolomite, brown fossiliferous dolomitic limestone 90-10, calcite 5, trace brown shale, marcasite 2, blende 1/10 OIL - 224.8
225	227½	Brown fossiliferous dolomitic limestone & brown shaly limestone, marcasite 1½, blende ½
227½	230	Brown fossiliferous dolomitic limestone, marcasite 1, blende ½
230	232½	Brown fossiliferous dolomitic limestone, gray clay 60-40, trace green shale, trace phosphate CLAY - 231½ marcasite 4/10, blende 2/10
232½	235	Bentonite, brown-gray dolomite 80-20, marcasite 2/10, few specks blende GLASS - 235
235	237½	Coarse cuttings: Dark brown dolomitic limestone & limestone, marcasite 2/10, few specks blende
237½	240	Gray dolomitic limestone, dark brown dolomitic limestone 95-5, marcasite 3/10, few specks blende McGREGOR - 237.6

Total depth measured 241.0' with steel tape.
Water at 48'

Driller's remarks:

207½-210 Strong flow water
207½-215 Lost most cuttings
215 -217½ Broken ground
222½-232½ Soft ground
235 -237½ Soft ground

Land Description: Southwest ¼ of Southwest ¼

Location of Hole: 75' East from Drill Hole #19

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 21

Property Name: HENRY C. GRAY
Began: 1-30-53 Finished: 2-4-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	15	Brown clay
15	20	Brown clay & buff dolomite 90-10
20	25	Buff dolomite, buff clay 97-3, few specks limonite
25	30	Buff dolomite, buff clay 95-5, few specks limonite
30	45	Buff dolomite
45	55	Coarse cuttings: Dark buff dolomite, thin trace limonite
55	65	Coarse cuttings: Dark buff dolomite
65	70	Dark buff dolomite
70	75	Brown-buff dolomite
75	85	Brown-buff dolomite
85	95	Buffish-brown dolomite
95	100	Buff dolomite
100	110	Brown dolomite, buffish-brown dolomite 90-10, a speck calcite, few specks marcasite
110	120	Brown calcareous dolomite, marcasite 1/10
120	125	Brown calcareous dolomite, marcasite 1/10
125	130	Brown calcareous dolomite, trace marcasite
130	135	Brown dolomite, gray chert 99-1, few specks brown chert, trace calcite, marcasite 2/10, few specks galena DRAB - 134
135	140	Brown dolomite, gray & brown chert 80-20, marcasite 3/10, few specks galena
140	150	Brown dolomite, gray & brown chert 90-10, marcasite 3/10
150	160	Brown dolomite, gray chert 95-5, marcasite 2/10
160	170	Gray-brown dolomite, gray chert 94-6, marcasite 5/10
170	180	Gray-brown dolomite, few specks gray chert, marcasite 3/10
180	190	Brown dolomite, gray chert 96-4, a speck calcite, marcasite 4/10
190	200	Brown dolomite, tan chert 94-6, marcasite 3/10
200	210	Brown dolomite, trace tan chert, a speck calcite, marcasite 2/10, few specks galena
210	215	Brown dolomite, few specks calcite, marcasite 1/10, few specks galena
215	220	Brown dolomite, gray, brown & marcasite-speckled chert 75-25, trace calcite, marcasite 2
220	225	Brown dolomite, brown & tan chert 88-12, marcasite 1
225	230	Brown dolomite, brown chert 99-1, trace calcite, marcasite 8/10
230	235	Brown dolomite, trace calcite, few specks gray dolomite, marcasite 6/10
235	240	Gray dolomite, marcasite 4/10 GRAY - 235
240	245	Gray & brown-gray dolomite, trace calcite, marcasite 8/10
245	247½	Gray-brown dolomite, calcite 1, marcasite 6/10

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Property Name: HENRY C. GRAY

From	To	
247½	250	Gray-brown dolomite, calcite 4, few specks green shale, marcasite 2
250	252½	Gray dark-speckled dolomite, gray clay, gray-brown dolomite 80-5-15, calcite 2, marcasite 1 BLUE - 250.7
252½	255	Gray dark-speckled dolomite, calcite 1, marcasite 9/10
255	257½	Brown-gray dark-speckled dolomite, calcite 8, marcasite 7
257½	260	Gray dark-speckled dolomite, calcite 10, marcasite 13
260	262½	Brown fossiliferous dolomitic limestone, marcasite 25, calcite 1 OIL - 260.0
262½	265	Light brown limestone, some fossils, calcite 5, marcasite 10
265	267½	Green clay CLAY - 265.0
267½	270	Bentonite GLASS - 270.0
270	272½	Brown dolomitic limestone, trace bentonite & gray dark fossiliferous limestone, marcasite 2, a speck blende
272½	275	Brown & tan limestone, calcite 3, marcasite 2, few specks blende
275	277½	No recovery, strong flow of water
277½	280	Coarse cuttings: Gray dark-speckled dolomitic limestone, dark brown dolomite 95-5, few specks chocolate brown shale, marcasite 2/10 McGREGOR - 275 (?)

Total depth measured 279.6 with steel tape
Water 82'
Driller's remarks:

0	18	Clay
18	100	Yellow lime
100	135	Brown lime
135	235	Brown lime & flint
235	250	Gray lime, soft ground
250	260	Blue lime
260	265	Dark brown lime
265	271	Green & gray clay
271	275	Dark brown lime
275	277½	Lost cuttings, strong water
277½	280	Gray lime, lost most cuttings 6½" hole

Land Description: Southwest ¼ of Southwest ¼

Location of Hole: 240' from Drill Hole #1 on a line to Drill Hole #5

Assays

	ZnS	FeS₂	PbS
255-257½	0.50	15.50	nil.
257½-260	0.40	20.90	"
260-262½	0.25	23.20	"
262½-265	0.10	16.60	"

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 22

Property Name: HENRY G. GRAY
Began: 2-10-53 Finished: 2-14-53
Drill Owner: John F. Robinson
Drill Runner: Lloyd Brown

Elevation 1001.67

DEPTH From	To	DESCRIPTION
0	5	Soil
5	15	Brown-buff clay
15	20	Dark buff dolomite, trace limonite, few specks marcasite & barite
20	25	Buff dolomite, few specks limonite & marcasite
25	40	Buff dolomite, gray-brown dolomite 95-5, few specks marcasite, & limonite
40	55	Buff dolomite
55	70	Buff dolomite
70	80	Buff dolomite, trace limonite, few specks galena
80	85	Coarse cuttings: Buffish-brown dolomite, few specks limonite
85	100	Brown & buffish-brown dolomite, marcasite 2/10
100	110	Brown & buffish-brown dolomite, few specks marcasite
110	120	Brown dolomite, trace calcite, thin trace marcasite
120	125	Brown calcareous dolomite, marcasite 3/10
125	130	Brown dolomite, limonite-stained clay 1, marcasite ½
130	135	Brown dolomite, gray marcasite-speckled chert & brown chert 94-5-1, marcasite 7/10 LMB - 132½
135	140	Brown dolomite, gray & tan chert 90-10, marcasite 3
140	150	Brown dolomite, gray-brown & brown chert 96-4, trace calcite marcasite 2
150	160	Brown dolomite, gray-brown chert 97-3, marcasite 1½
160	170	Brown dolomite, gray-brown chert 99-1, marcasite 4/10
170	180	Brown-brown dolomite, gray chert 97-3, marcasite 8/10, trace blende
180	190	Brown dolomite, gray chert 95-5, trace calcite, marcasite 1, trace galena, specks blende
190	200	Brown dolomite, tan chert 96-4, marcasite ½, few specks galena & blende
200	205	Brown dolomite, gray-brown chert 99-1, few specks calcite, marcasite 3/10
205	210	Brown marcasite-speckled dolomite, trace gray chert, calcite 5, marcasite 5
210	220	Brown marcasite-speckled dolomite, gray marcasite-speckled chert 94-6, calcite 2, marcasite 7
220	225	Brown dolomite, gray & marcasite-speckled chert 75-25, calcite ½, marcasite 4
225	230	Brown dolomite, brown chert 98-2, marcasite 4
230	232½	Brown dolomite, trace calcite, marcasite 2
232½	235	Brown dolomite, trace calcite, marcasite 2
235	237½	Brown-gray & gray dolomite, brown dolomite 95-5, marcasite ½ GRAY - 235.1
237½	240	Brown-gray dolomite, calcite ½, marcasite 2½

(Continued on next page)

Property Name: HENRY C. GRAY

From	To	
240	245	Gray & brown-gray dolomite, calcite 1, marcasite 2
245	247½	Coarse cuttings: Gray-brown dolomite, marcasite 1, tr of calcite
247½	250	Gray-brown dolomite, calcite 1, marcasite 1
250	252½	Gray-brown calcareous dolomite, marcasite 8/10, a speck gray dark-speckled dolomite
252½	255	Gray dark-speckled dolomite, brown dolomite 95-5, marcasite ½ BLUE - 252½
255	257½	Gray dark-speckled dolomite, calcite ½, marcasite 3/10
257½	260	Gray dark-speckled dolomite, calcite ½, marcasite 1
260	262½	Brown dolomitic limestone, gray dark-speckled dolomite 80-20, calcite 10, marcasite 35 OIL - 260½ few specks blende
262½	265	Dark brown dolomitic limestone, calcite 5, marcasite 30, few specks blende
265	267½	Brown fossiliferous limestone (dolomitic), calcite 5, marcasite 20, few specks blende
267½	270	Brown fossiliferous limestone (dolomitic), green clay 80-20, few specks phosphate, calcite 8, marcasite 15, few specks blende & galena CLAY - 269½
270	272½	Gray clay (bentonite)
272½	275	Coarse cuttings: Dark brown dolomite, calcite 5, marcasite 4 GLASS - 272½
275	277½	Brown limestone, calcite 2, marcasite 9 (probable ravelling) a speck blende & galena
277½	280	Gray dolomitic limestone, brown dolomitic limestone 90-10, marcasite 1 McGREGOR - 277.7

Total depth measured 279.5 with steel tape.
Water at 77'
Remarks by driller: Soft ground 257½ to 270
Otherwise, just an ordinary hole
6½" diameter
Land Description: Southwest ¼ of Southwest ¼

Location of Hole: 80' west & 15' North from Southeast corner of Southwest ¼ of Southwest ¼

Assays

	ZnS	FeS_2	PbS
260 -262½	0.45	47.70	nil.
262½-265	0.30	25.10	"

Geologists: Harold W. Davis
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: JOHN O. GRAY
Began: 7-21-52 Finished: 7-26-52
Drill Owner: John F. Robinson
Drill Runner: Gayl Johnson

Total Depth 245

Water Level 39

DEPTH From	To	DESCRIPTION
0	10	Buff clay, few cuttings, buff dolomite
10	25	Buff clay, buff dolomite 10
25	40	Buff dolomite & clay
40	55	Pale buff dolomite, some buff clay
55	70	Pale buff dolomite
70	85	Pale buff dolomite
85	90	Pale brown-buff dolomite
90	95	Pale brown-buff dolomite, specks brown chert, trace light brown dolomite
95	100	Light brown & pale buff dolomite, brown & tan chert 96-4, few specks marcasite DRAB - 95
100	105	Pale brown dolomite, brown & tan chert 99-1, few specks marcasite
105	115	Brown dolomite, brown chert 97-3, thin trace marcasite
115	125	Brown dolomite, gray & tan chert 96-4, trace marcasite
125	135	Brown dolomite, brown chert 99-1, brown clay 4, trace marcasite
135	145	Brown dolomite, gray & tan chert 97-3, brown clay 2, trace marcasite
145	155	Gray-brown dolomite, few specks calcite, thin trace marcasite
155	165	Pale brown dolomite, trace calcite, trace marcasite
165	175	Brown dolomite, gray & brown chert 96-4, trace marcasite
175	185	Brown dolomite, gray & brown chert 95-5, marcasite 1/10
185	190	Brown dolomite, brown & tan chert 98-2, marcasite 1/10
190	195	Light brown dolomite, tan chert 99-1, trace marcasite
195	197½	Pale gray-brown dolomite, trace marcasite GRAY - 195
197½	200	Light gray-brown dolomite, trace marcasite
200	202½	Gray-brown dolomite, thin trace marcasite
202½	205	Gray-brown dolomite, thin trace marcasite
205	207½	Dark gray-brown dolomite, few specks calcite, trace marcasite
207½	210	Dark gray-brown dolomite, trace marcasite
210	212½	Light gray dark-speckled dolomite, trace marcasite BLUE - 210
212½	215	Light gray dark-speckled dolomite, trace marcasite
215	217½	Light gray dark-speckled dolomite, trace dolomite limestone 5, trace marcasite
217½	220	Brown & tan fossiliferous dolomite limestone, few specks marcasite OIL - 217½
220	222½	Brown & tan fossiliferous dolomite limestone, few specks marcasite
222½	225	Brown & tan fossiliferous dolomite limestone, few specks marcasite

(Continued on next page)

Property Name: JOHN C. GRAY

From	To	
225	227½	Brown & tan limestone, trace marcasite, few specks blende
227½	230	Gray fossiliferous limestone, green shale 80-20, trace marcasite, few specks blende CLAY - 229½
230	232½	Green shale & gray clay, black fossiliferous limestone 25, brown & light tan fossiliferous limestone 10, few specks marcasite
232½	235	Brown & tan limestone, black fossiliferous limestone & green shale 20, few specks marcasite, specks blende GLASS - 233
235	237½	Brown & tan limestone, green shale 15, thin trace marcasite
237½	240	Brown & tan limestone, green shale 10, few specks marcasite
240	242½	Gray dolomite limestone, brown & tan limestone 60-40, few specks marcasite McGREGOR - 241
242½	245	Gray dolomite limestone, trace green shale, few specks marcasite

Total depth measured 245.5' with steel tape.

Water at 39'

Land Description: Southwest quarter of the Northwest quarter of Section 7, Twnsp 1 North, Rng 1 East

Location of Hole: 70' North & 860' West from Southeast corner of lease.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2 (DRAB)

Property Name: JOHN OLIVER GRAY
Began: 12-15-52 Finished: 12-19-52
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	15	Brown clay
15	20	Buff dolomite, trace limonite
20	35	Buff dolomite, few specks limonite
35	50	Buff dolomite & few specks limonite & marcasite
50	65	Buff dolomite
65	75	Buff dolomite
75	90	Buff dolomite
90	100	Buff dolomite, trace buff clay
100	110	Rather dark buff dolomite
110	115	Brown-buff & dark buff dolomite, few specks limonite
115	120	Brown-buff & dark buff dolomite, few specks limonite
120	125	Dark brown-buff dolomite, few specks limonite
125	130	Dark brown-buff dolomite, & dark buff dolomite, brown chert 1, buff clay 1, few specks limonite DRAB - 128
130	135	Buff dolomite, white chert 97-3, very thin trace limonite
135	140	Dark buff dolomite, gray-brown chert 95-5, few specks limonite
140	145	Dark buff dolomite, dark brown chert 90-10
145	150	Brown dolomite, buff dolomite 95-5, trace gray chert, a speck dark brown-buff chert, marcasite 2/10
150	160	Brown dolomite, buff dolomite 80-20, gray chert 1, marcasite 1/10
160	170	Gray-brown dolomite, gray chert 98-2, trace marcasite
170	180	Gray-brown dolomite, gray chert 96-4, marcasite 2/10
180	190	Brown dolomite, gray-brown chert 94-6, marcasite 1/10
190	200	Brown dolomite, gray-brown chert 98-2, marcasite 2/10
200	210	Brown dolomite, few specks calcite, marcasite 1/10
210	220	Brown dolomite, tan & gray-brown chert 80-20, trace marcasite
220	225	Brown dolomite, tan & brown chert 95-5, trace calcite, trace marcasite
225	230	Brown dolomite, trace brown & tan chert, few specks calcite, trace marcasite
230	232½	Brown dolomite, brown-gray dolomite 50-50, few specks chert, thin trace marcasite GRAY - 231.2
232½	235	Brown-gray dolomite, few specks marcasite
235	240	Brown-gray & gray dolomite, few specks marcasite
240	245	Gray-brown dolomite, trace marcasite
245	247½	Gray dark-speckled dolomite, gray-brown dolomite 60-40, gray clay 1, trace marcasite BLUE - 246.0
247½	250	Dark gray dark-speckled dolomite, thin trace marcasite
250	252½	Dark gray dark-speckled dolomite, trace calcite, thin trace marcasite
252½	255	Dark gray dark-speckled dolomite, few specks calcite, trace brown shale, thin trace marcasite

Property Name: JOHN OLIVER GRAY

From	To	
255	257½	Brown & tan fossiliferous limestone, trace brown shale, thin trace marcasite OIL - 255.0
257½	260	Brown & tan fossiliferous limestone, trace brown shale, few specks marcasite
260	265	Brown limestone, dark brown shaly limestone 97-3, few fossils, trace marcasite
265	267½	Gray dark-speckled limestone, brown limestone 60-40, trace marcasite
267½	270	Brown lime tone & gray dark-speckled limestone, green clay & dark gray fossiliferous limestone 60-40, few specks marcasite CLAY - 269.0
270	272½	Gray clay (BENTONITE), Brown limestone, 40-40, trace green shale & dark gray fossils, trace marcasite
272½	275	Brown & tan limestone, trace marcasite GLASS - 272.5
275	277½	Dark brown limestone, trace black shale, trace marcasite
277½	280	Dark brown lime tone, gray limestone 90-10, black shale 1, trace marcasite McGREGOR - 279.7
280	282½	Gray dolomitic limestone, few specks marcasite

Total depth measured 283.0' with steel tape.
Water at 79½' from collar

Nothing particularly interesting mentioned on driller's log.

Location of Hole: 300' South & 250' East from Northwest corner of lease

Geologists: Edwin J. Poehlmann
N. E. [illegible]

DRILL RECORD
The Eagle-Picher Company

Hole No. 2

Property Name: [illegible]
Began: 2-8-52 Finished: [illegible]
Drill Owner: Swalley estate
Drill Runner: David Taylor

Total Depth 137.5

Water Level 70

DEPTH From	To	Description
0	5	Brown soil
5	10	Buff & brown clays
10	15	Brown clay
15	20	Buff clay
20	25	Buff dolomite, brown chert & buff clay, some coarse cuttings
25	30	Buff dolomite, brown chert [illegible] limonite
30	45	Buff dolomite, [illegible] few specks limonite
45	60	Light buff dolomite, brown & tan chert [illegible], few specks limonite
60	70	Buff dolomite, brown & tan chert [illegible] limonite 1/10
75	85	Brown buff dolomite, brown chert [illegible], trace limonite
85	90	Light brown dolomite, light brown chert [illegible], trace limonite
90	95	Light brown dolomite, few specks gray [illegible] dolomite, trace brown chert, trace limonite, few specks [illegible]
95	100	Gray dolomite, light brown dolomite [illegible], trace limonite, trace marcasite [illegible] 97
100	105	Gray-brown dolomite, light brown dolomite [illegible], trace calcite, marcasite 1/10, trace limonite
105	107½	Gray dolomite, light brown dolomite [illegible], trace marcasite, trace limonite
107½	110	Gray dolomite, gray-speckled dolomite [illegible], light brown dolomite [illegible], marcasite [illegible], trace limonite [illegible] - 109
110	112½	Gray-dark-speckled dolomite [illegible], calcite [illegible], marcasite 1/10
112½	115	Gray dark-speckled dolomite [illegible], light brown dolomite [illegible], marcasite 1/10
115	117½	Gray dark-speckled dolomite, gray clay [illegible], trace light brown limy dolomite, marcasite [illegible] 1/10
117½	120	Brown & gray-brown limy dolomite, calcite [illegible], trace marcasite [illegible] - 117.5
120	122½	Brown & gray-brown limestone, trace gray clay, trace marcasite
122½	125	Brown & tan dolomitic limestone, marcasite 1/10
125	127½	Brown dolomitic limestone & gray, fossiliferous limy shale, trace marcasite
127½	130	Gray clay, brown limestone [illegible], trace marcasite, trace phosphate [illegible] - 127.5
130	132½	Brown dolomitic limestone, calcite [illegible], marcasite 10 [illegible] - 130
132½	135	Brown dolomitic limestone, calcite [illegible], dark brown shale limestone [illegible] marcasite 3
135	137.5	Gray dolomitic limestone, brown dolomitic limestone 60-40, marcasite [illegible] [illegible] - 136

Total depth measured [illegible] with steel tape.

Land Description: Southwest ¼ of the Northwest ¼ of Sec.32, Twp. [illegible] North, Rge. 1 East

Location of Holes: [illegible] feet from Hole #1

Geologist: E. J. Poehlmann

DRILL RECORD
The Eagle-Picher Mining & Smelting Co.

HOLE NO. 1

Property Name: HENRY V. HINDERMAN — Total Depth 135
Began: 6-26-52 Finished: 6-28-52
Drill Owner: Swalley Estate
Drill Runner: Dave Taylor — Water Level 55'

DEPTH From	To	DESCRIPTION
0	5	Soil & clay
5	10	Buff clay
10	20	Brown sandy clay, few coarse cuttings buff dolomite & chert
20	25	Coarse cuttings buff dolomite & chert, brown sandy clay 15
25	35	Buff dolomite, buff chert 97-3, trace limonite, few coarse cuttings
35	45	Buff dolomite, brown & tan chert 98-2, trace limonite, few coarse cuttings
45	55	Buff dolomite, brown & tan chert 97-3, few coarse cuttings
55	65	Buff dolomite, tan chert 97-3, few coarse cuttings
65	75	Buff dolomite, trace brown & tan chert, a speck marcasite, few coarse cuttings
75	80	Buff dolomite, brown & tan chert 95-5, few coarse cuttings
80	85	Coarse cuttings buff dolomite, brown chert 90-10
85	95	Brown-buff dolomite, brown & tan chert 99-1
95	100	Coarse cuttings brown-buff dolomite, brown & tan chert 99-1
100	110	Light brown-buff dolomite, few specks tan chert, a speck limonite
110	115	Light brown-buff dolomite, brown & tan chert 97-3, few specks limonite
115	117½	Light brown dolomite, brown & tan chert 99-1, gray clay & shale 1
117½	120	Light brown & buff dolomite, few specks chert, few specks marcasite
120	122½	Buff dolomite, brown shale 1, fossils 4, a speck marcasite OIL - 120-122½
122½	125	Coarse cuttings, brown shale & brown fossiliferous limestone
125	127½	Coarse cuttings, green shale & gray clay, brown fossiliferous limestone 80-20 CLAY - 125-127½
127½	130	Coarse cuttings, brown dolomite limestone, gray clay 15, few specks marcasite GLASS - 127½-130
130	132½	Coarse cuttings, brown dolomite limestone & brown limestone, buff dolomite 30
132½	135	Coarse cuttings, gray dolomite limestone, buff dolomite 40, few specks marcasite McGREGOR - 132½-135

Total depth measured 135.5 with steel tape.

Land Description: SW¼ of NE¼ of Sec 31 T-2-N R-1-E of 4th PM.

Location of Hole: 1000' E from Verna Cole DH #3

Geologists: Norman Eastmoore
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 3

Property Name: DELMAR J. HEIM
Began: 9-10-52 Finished: 9-12-52
Drill Owner: Swalley Estate
Drill Runner: David Taylor

Total Depth 122½

Water Level 41.5'

DEPTH From	To	DESCRIPTION
0	5	Soil & clay (6" soil)
0	10	Clay
10	15	Clay & chert gravel
15	20	Brown mud
20	25	Buff dolomite, trace limonite, trace gray chert
25	30	Buff dolomite, gray chert 98-2, trace limonite
30	40	Buff dolomite, gray & tan chert 97-3, trace limonite
40	50	Buff dolomite, gray & tan chert 97-3, trace limonite
50	60	Brown-buff dolomite, brown & tan chert 98-2
60	65	Brown-buff dolomite, brown & tan chert 94-6
65	70	Buff & brown dolomite, brown chert 99-1, marcasite ½
70	75	Buff dolomite, gray dolomite 60-40, trace marcasite
75	80	Gray dolomite, trace marcasite
80	85	Gray-buff dolomite, brown chert 99-1, marcasite trace
85	90	Gray-buff dolomite, gray & brown chert 98-2, marcasite 1½
90	92½	Buff dolomite, gray dolomite 80-20, trace brown chert, marcasite 1
92½	95	Gray-buff dolomite, gray dark-speckled dolomite 80-20, marcasite 2/10
95	97½	Gray-brown dolomite, gray dark-speckled dolomite 80-20, marcasite 1/10, trace brown chert
97½	100	Brown limy dolomite, trace brown limy shale, trace brown chert, marcasite 1/10 OIL - 97'
100	102½	Brown limy dolomite, brown limy shale 3, marcasite trace, galena specks
102½	105	Brown limy dolomite, brown limy shale 2, marcasite trace
105	107½	Brown limy dolomite, brown limy shale 1, gray clay & gray clay 20, marcasite trace CLAY - 106
107½	110	Gray & light brown limy dolomite, trace gray clay, marcasite trace GLASS - 107
110	112½	Brown & light brown dolomitic limestone, marcasite trace
112½	115	Brown dolomitic limestone, marcasite 2/10
115	117½	Brown dolomitic limestone, brown limy shale 5, trace calcite, marcasite [illegible], trace green greasy shale
117½	120	Brown dolomitic limestone, light brown-gray limestone 60-40, trace green shale [illegible], trace gray greasy shale, trace brown shale marcasite 2/[illegible] McGREGOR - 119'
120	122½	Gray limest[illegible] trace gray greasy shale, trace brown shale, trace green [illegible] trace calcite, marcasite 2/10

Total depth [illegible] 122½

Land Description: Southwest ¼ of Northeast ¼, Sec. 32

Location of Hole: 1000' East Heim Drill Hole #2

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: HENRY V. HINDERMAN
Began: 9-19-52 Abandoned 9-20-52
Drill Owner: John F. Robinson
Drill Runner: O. Wallace

DEPTH From	To	DESCRIPTION
0	15	Brown clay
15	25	Dark buff dolomite & gray-brown chert
25	30	Buff dolomite & a little chert
30	35	Coarse cuttings: buff dolomite, gray-brown chert 60-40, first solid formation at 33'
35	60	Buff dolomite & a little chert (extremely loose formation at 50' to 52')

Hole abandoned by driller at 60' due to caving ground and inability to keep it straight enough to drill.

Land Description: Northeast ¼ of the Northeast ¼

Location of Hole: 300' south and 300' west from Northeast corner of Section

Geologist, Harold F. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 3

Property Name: HENRY V. HINDERMAN
Began: 9-20-52 Finished: 9-25-52
Drill Owner: John F. Robinson
Drill Runner: G. Wallace

DEPTH From	DEPTH To	DESCRIPTION
0	5	Soil
5	10	Buff clay
10	15	Buff clay, red & buff chert 96-4
15	20	Buff clay, buff, yellow & red chert 60-40
20	25	Buff clay, yellow, buff & red chert 70-30, trace buff dolomite, trace limonite
25	30	Buff dolomite, buff clay 50-50, red & brown chert 1 (loose boulders)
30	35	Buff dolomite, buff clay 60-40, yellow & red chert 1 (loose boulders)
35	40	Buff dolomite, yellow & gray-brown chert 90-10, trace red chert, trace limonite (solid formation)
40	50	Buff dolomite, gray-brown chert 88-12, trace limonite
50	60	Buff dolomite, yellow & gray-brown chert 98-2, limonite 2/10
60	70	Buff dolomite, yellow & light brown chert 97-3, few specks limonite
70	80	Buff dolomite, trace yellow chert
80	90	Buff dolomite, yellow, light brown & buff chert 95-5
90	100	Coarse cuttings: buff dolomite, gray-brown & yellow chert 88-12, few specks limonite
100	105	Few coarse cuttings: buff dolomite, light yellow & buff chert 96-4, few specks limonite
105	110	Buff dolomite, buff, yellow & gray-brown chert 97-3, specks green shale, specks limonite GRAY - 107½
110	115	Buff dolomite, yellow & gray-brown chert 90-10, specks marcasite & limonite (ravelling)
115	117½	Buff dolomite, buff & tan chert 96-4, (coarse cuttings), few coarse chips of limonite
117½	120	Buff dolomite, brown & tan chert 97-3, few coarse cuttings, trace limonite
120	122½	Buff dolomite, buff & tan chert 95-5
122½	125	Dark brown dolomite with dark specks, buff dolomite 80-20 BLUE - 125
125	127½	Dark buff dolomite & dark brown dolomite with dark specks (coarse cuttings), some fossils
127½	130	Buff & brown-buff dolomitic limestone, chocolate brown shale 95-5, numerous fossils OIL - 127½
130	132½	Brown fossiliferous dolomitic limestone, green clay 90-10, few specks phosphate, trace marcasite CLAY - 132.5
132½	135	Mostly buff dolomite & gray-brown chert ravellings (coarse cuttings) trace green clay, few specks marcasite
135	137½	Light brown dolomitic limestone, considerable buff dolomitic ravellings, specks marcasite GLASS - 135
137½	140	Light brown dolomitic limestone, gray dolomitic limestone 60-40, considerable buff dolomitic ravellings, few specks marcasite MAGNOR - 139

(Continued on next page)

Property Name: HENRY V. HIEDEMAN

From	To	
140	142½	Gray dolomitic limestone, considerable buff dolomitic ravellings, few specks marcasite
142½	145	Gray dolomitic limestone, considerable buff dolomitic ravellings, few specks marcasite

Total depth measured is 147.0' with steel tape.
Water at 82'

Location of Hole: 12' West from #2

Geologist: Harold S. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: HENRY V. HINDERMAN
Began: 9-26-52 Finished: 10-2-52
Drill Owner: John F. Robinson
Drill Runner: G. Wallace

DEPTH From	To	DESCRIPTION
0	5	Brown & buff soil
5	10	Buff clay
10	15	Light brown clay
15	20	Light brown clay
20	25	Buff clay, little buff dolomite
25	30	Buff clay, buff dolomite 60-40 (Unconsolidated bouldery form)
30	35	Buff dolomite, buff clay 80-20, trace tan chert
35	40	Buff dolomite, trace gray-brown chert
40	45	Buff dolomite, gray-brown chert 95-5 (some coarse cuttings) trace limonite
45	50	Buff dolomite, gray-brown chert 93-7, limonite 1/10 (first solid formation at 46')
50	60	Buff dolomite, gray-brown chert 96-4, trace limonite
60	70	Buff dolomite, gray-brown chert 98-2, several coarse chips of limonite
70	80	Buff dolomite, tan & gray-brown chert 97-3, trace limonite
80	90	Buff dolomite, gray-brown, tan & dark buff chert 80-20, few specks limonite
90	95	Buff dolomite, gray-brown, tan & dark buff chert 96-4, trace limonite
95	100	Gray dolomite (coarse), buff dolomite (medium) 60-40, trace limonite GRAY - 97
100	105	Gray dolomite, trace green shale, considerable buff dolomite ravelling, few specks marcasite
105	107½	Gray dolomite, (considerable buff dolomite & chert ravellings), specks marcasite
107½	110	Buff dolomite, gray dolomite 80-20, trace gray cave clay, trace calcite, specks marcasite
110	112½	Buff dolomite, gray dark-speckled dolomite 70-30, trace light gray clay, trace dark gray cave clay, specks marcasite BLUE - 111½
112½	115	Gray dark-speckled dolomite, buff dolomite & chert 60-40, specks marcasite
115	117½	Gray dark-speckled dolomite, buff dolomite & chert 70-30, specks marcasite
117½	120	Gray dark-speckled dolomite, brown dolomite limestone 80-20, some buff dolomite & chert ravellings, trace marcasite OIL - 119½
120	122½	Brown fossiliferous dolomitic limestone, trace marcasite
122½	125	Brown & tan limestone, specks marcasite
125	127½	Brown & tan limestone, dark brown shaly limestone 95-5, trace marcasite
127½	130	Light brown & tan limestone, brown shaly limestone 95-5, trace marcasite

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Property Name: HENRY V. HINDERMAN

From	To	
130	132½	Gray dark-speckled dolomitic limestone, green clay & shale 80-20, few specks phosphate, trace marcasite CLAY - 132.0
132½	135	Pale brown limestone, bentonite 2, dark gray fossiliferous limestone 2, trace marcasite GLASS - 133
135	137½	Brown dolomitic limestone & tan limestone, marcasite 1/10
137½	140	Brown dolomitic limestone & tan limestone, trace marcasite
140	142½	Dark brown limestone & tan limestone, dark brown shale 3, marcasite 1/10
142½	145	Gray dolomitic limestone, brown & tan limestone 90-10, marcasite 1/10, specks blende McGREGOR - 142.8
145	147	Gray dolomitic limestone, marcasite 1/10, specks blende

Total depth measured 146.0' with steel tape.
Water at 77' from collar

DRILLER'S REMARKS:

35 - 40 Soft
40 - 45 Caved bad
First real solid formation at 46'

Land Description: Northeast ¼ of Northeast ¼

Location of Hole: 650' West from Drill Hole #3

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 5

Property Name: HENRY V. HINDERMAN
Began: 10-2-52 Finished: 10-4-52
Drill Owner: John F. Robinson
Drill Runner: Glenn Wallace

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Brown clay
10	20	Brown-buff clay
20	25	Buff clay & buff dolomite, few specks limonite
25	30	Buff clay & buff dolomite, few specks chert
30	35	Buff dolomite, brown chert 95-5, trace limonite
35	40	Buff dolomite, brown & tan chert 90-10, trace limonite
40	45	Buff dolomite, brown & tan chert 96-4, trace limonite
45	50	Buff dolomite, gray-brown & tan chert 92-8, trace limonite
50	60	Buff dolomite, gray-brown & tan chert 94-6, trace limonite
60	70	Buff dolomite, tan & gray chert 91-9, trace limonite
70	80	(Some coarse cuttings:) Buff dolomite, trace gray chert, limonite 1
80	85	Buff dolomite, dark brown chert 60-40, trace tan chert, limonite ½
85	90	Buff dolomite, dark gray-brown cave clay, brown chert 60-30-10, limonite ½
90	95	Coarse cuttings: buff dolomite, brown & tan chert 94-6, limonite ½, trace gray clay
95	100	Coarse cuttings: buff dolomite, brown & tan chert 98-2, limonite2
100	102½	Coarse cuttings: buff dolomite, brown & tan chert 97-3, limonite 2
102½	105	Coarse cuttings: buff dolomite, brown & tan chert 99-1, limonite 2
105	107½	Coarse cuttings: buff dolomite, brown & tan chert 94-6, limonite 2, specks calcite
107½	110	Coarse cuttings: buff dolomite, brown & tan chert 95-5, limonite 4
110	112½	Coarse cuttings: buff dolomite, brown & tan chert 97-3, limonite 5
112½	115	Buff dolomite, brown & tan chert 96-4, limonite 1
115	117½	Coarse cuttings: buff dolomite, gray & brown chert 99-1, limonite 1
117½	120	Gray-buff dark-speckled dolomite, gray-buff clay 3, brown & tan chert 4, limonite 2
120	122½	Buff & gray-buff dark-speckled dolomite, tan & brown chert 1, limonite 1
122½	125	Coarse cuttings: buff dolomite, brown chert 95-5, trace gray clay, limonite 1
125	127½	Fairly coarse cuttings: buff dolomite, brown chert, gray dolomite 65-30-5, limonite ½
127½	130	Fairly coarse cuttings: buff dolomite, brown chert, gray dolomite 70-15-15, limonite & marcasite 3
130	132½	Buff dolomite & brown chert, green clay 80-20, few specks phosphate, limonite & marcasite 2 CLAY - 133?

(Continued on next page)

Property Name: HENRY V. HINDERMAN

From	To	
132½	135	Buff dolomite & brown chert, green clay 60-40, little dark brown dolomite, limonite & marcasite 2 GLASS - 134'
135	137½	Buff dolomite, dark brown dolomite, gray dolomitic limestone 40-30-30, limonite & marcasite 1 McGREGOR - 136'
137½	140	Gray dolomitic limestone, buff dolomite 60-40, trace dark brown shale, marcasite & limonite 3/10
140	142	Buff dolomite, gray dolomitic limestone 75-25, limonite & marcasite 2/10

Total depth measured 142.4' with steel tape.
Water at 70'
Impossible to pick contacts due to excessive ravelling.
No "Blue" or "Oilrock" detected.

Driller's Remarks:
51 - 53 loose ground.
Hole drilled 8" to 60' and set casing.
First flow of water at 70-75
78 - 83 Loose ground
112½ - 117½ Caving badly
6" hole from 60 to 142

Land Description: Northwest ¼ of Northeast ¼

Location of Hole: 900' West from Drill Hole #4

[illegible] Creek & Davis
[illegible] Pochlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: RAYMOND M. HOUTAKKER — Total Depth 275'
Began: 7-28-52 Finished: 8-4-52
Drill Owner: John F. Robinson
Drill Runner: Gayl Johnson — Water Level 68.8

DEPTH From	To	DESCRIPTION
0	10	Dark buff clay
10	15	Buff clay
15	20	Buff clay & buff dolomite 15
20	30	Buff dolomite, buff clay 60-40
30	45	Dark buff & buff clay, buff dolomite 80-40, limonite ½
45	60	Buff dolomite, buff clay 2, trace limonite (few coarse cuttings
60	75	Buff dolomite, buff clay 5 (few coarse cuttings)
75	90	Buff limonite stained dolomite, limonite 1
90	105	Buff limonite stained dolomite, limonite 2
105	115	Buff limonite stained dolomite, limonite 8
115	120	Brown-buff dolomite, trace black shale, limonite ½
120	125	Brown-buff dolomite, specks brown chert, limonite 2, few specks marcasite
125	130	Brown dolomite, brown & tan chert 99-1, trace gray-brown clay, trace limonite, few specks marcasite DRAB - 125
130	135	Brown dolomite, brown & tan chert 95-5, few specks limonite & marcasite
135	140	Brown dolomite, brown & tan chert 96-4, few specks marcasite
140	150	Brown dolomite, brown & gray chert 98-2, few specks marcasite
150	160	Brown dolomite, gray & tan chert 94-6, few specks marcasite
160	170	Gray-brown dolomite, gray & tan chert 97-3, trace marcasite
170	180	Gray-brown dolomite, gray & tan chert 95-5, trace gray shale, trace marcasite
180	190	Brown dolomite, brown & tan chert 97-3, few specks marcasite
190	200	Brown dolomite, gray & tan chert 94-4, few specks marcasite
200	210	Brown dolomite, few specks chert, trace brown clay, few specks marcasite
20	215	Brown dolomite, tan chert 95-5, few specks marcasite
215	220	Brown dolomite, tan chert 96-4, few specks marcasite
220	225	Brown dolomite, trace chert, brown clay 5, few specks marcasite
225	230	Brown dolomite, black clay 2, few specks marcasite
230	232½	Gray dolomite, brown dolomite 5, black clay 15, few specks marcasite GRAY - 230
232½	235	Gray dolomite, black clay 10, few specks marcasite
235	237½	Light brown dolomite, brown & black clay 3, few specks marcasite

(Continued on next page)

Property Name: RAYMOND B. HOUTAKKER

From	To	
237½	240	Gray brown dolomite, gray clay 15, trace marcasite
240	242½	Gray brown dolomite, gray clay & shale 10, trace marcasite
242½	245	Gray dark-speckled dolomite, gray shale 5, few specks marcasite BLUE - 242½
245	247½	Gray dark-speckled dolomite, brown dolomite & brown limy shale 60-40, gray shale 3, considerable fossils, trace marcasite OIL - 246½
247½	250	Brown fossiliferous dolomite limestone, gray dark-speckled dolomite 30, (ravelling) few specks marcasite
250	252½	Brown fossiliferous dolomite limestone, gray dark-speckled dolomite 15 (ravelling), gray shale 5, few specks marcasite
252½	255	Tan limestone, dark brown shaly limestone 10, trace marcasite, few specks blende
255	257½	Brown & tan limestone, dark brown limy shale 20, few specks calcite, trace marcasite, specks blende
257½	260	Green shale & gray clay, phosphate 1, tan limestone 5, trace marcasite CLAY - 257½
260	262½	Small recovery: Tan dolomite limestone, gray clay 60-40, trace phosphate, brown & black clay 3, trace marcasite GLASS - 261
262½	265	Brown & tan dolomite limestone, gray-brown clay & shale 12, brown shale 4, green shale 3, marcasite ½
265	267½	Brown & tan dolomite limestone, blue-gray shale 5, gray clay 5, marcasite ½
267½	270	Brown & tan dolomite limestone, blue-gray shale 3, gray clay 1, green shale 8, marcasite 1
270	272½	Brown & tan dolomite limestone, brown & gray mottled shale 20, gray shale & clay 25, blue-gray shale 5, gray dolomite limestone 1, marcasite 1 McGREGOR - 272½
272½	275	Brown dolomite limestone, green shale 30, gray dolomite 15, brown shale 1, marcasite ½

Total depth measured 274.5 with steel tape.
Water at 68½'

Land Description: Southwest ¼ of Southwest ¼ of Sec. 6, Twnsp 1 North, Rng 1 East

Location of Hole: 300' North & 1040' West from Southeast corner of the Southwest ¼ of the Southwest ¼ of Section 6, Twnsp 1 North, Rng 1 East

Geologists: J. W. Lindsey
Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 8

Property Name: R. F. HOUTAKKER
Began: 9-4-52 Finished: 9-9-52
Drill Owner: John F. Robinson
Drill Runner: G. Wallace

DEPTH From	DEPTH To	DESCRIPTION
0	12	Soil & clay
12	15	Buff dolomite, gray clay 3, green shale 2, trace marcasite
15	30	Buff dolomite, green shale 3, marcasite trace
30	45	Buff dolomite
45	60	Buff dolomite
60	75	Buff dolomite
75	85	Buff dolomite, trace calcite
85	90	Buff & brown dolomite, trace brown chert, marcasite trace DRAB - 87
90	100	Buff & brown dolomite, brown chert 99-1, marcasite trace
100	110	Brown & light brown dolomite, trace brown chert
110	120	Brown dolomite, gray & brown chert 98-2, marcasite trace
120	130	Brown & brown-buff dolomite, gray chert 96-4, marcasite 1/10
130	140	Brown & brown-buff dolomite, gray & brown chert 97-3, marcasite trace
140	150	Brown & buff-gray dolomite, gray chert 99-1
150	160	Brown & buff-gray dolomite, gray & light gray chert 97-3, gray clay 1, marcasite trace
160	170	Brown & buff-gray dolomite, light gray & gray chert 99-1, marcasite trace
170	180	Brown & buff-gray dolomite, brown & gray chert 96-4, marcasite trace
180	185	Brown & light brown dolomite, gray chert 98-2
185	190	Brown & buff-gray dolomite, trace brown chert, trace gray dolomite, trace marcasite GREY - 187
190	192½	Gray dolomite, trace marcasite-speckled gray dolomite, marcasite trace
192½	195	Gray & buff gray dolomite
195	197½	Gray dolomite, trace calcite, trace marcasite
197½	200	Gray & brown dolomite, trace marcasite
200	202½	Light brown & gray dolomite, trace marcasite
202½	205	Light brown & gray dolomite, gray dark-speckled dolomite 40, calcite trace, marcasite trace BLUE - 204
205	207½	Dark-speckled gray & light gray dolomite, trace green clay, marcasite trace
207½	210	Dark-speckled gray dolomite
210	212½	Dark-speckled gray dolomite, marcasite trace
212½	215	Brown & gray fossiliferous limy dolomite, marcasite trace galena specks OIL - 212.5
215	217½	Light brown fossiliferous dolomite, marcasite trace
217½	220	Light brown fossiliferous dolomite, trace brown limy shale, calcite trace, marcasite trace

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Geologists: N. E. Eastmoore
Edwin J. Poehlmann

HOLE NO. 2
Continued

Property Name: H. F. HOUTAKKER

From	To	
220	222½	Light brown dolomitic limestone, brown limy shale 2, trace calcite, trace marcasite
222½	225	Light brown dolomitic limestone, brown limy shale 2, gray clay & shale 20 CLAY - 224.5
225	227½	Gray clay, light brown fossiliferous limy dolomite 20, trace black fossiliferous shale
227½	230	Gray clay, brown fossiliferous dolomitic limestone 20, GLASS - 229.5
230	232½	Brown dolomitic limestone, trace tan limestone, trace gray clay, marcasite trace
232½	235	Brown dolomitic limestone, trace tan limestone, trace marcasite
235	237½	Brown dolomitic limestone, trace tan limestone, trace marcasite, trace gray greasy shale
237½	240	Gray fossiliferous limestone, green shale, & gray greasy shale 2, brown limestone 20, marcasite trace McGREGOR - 238

Total depth measured 241.0' with steel tape.
Water at 49'

Land Description: Southwest ¼ of the Southwest ¼ of Sec. 5, Twnsp 1 North, Rng 1 East

Location of Hole: L. . . A. Hole #3

The Eag

Property
Began: Finished:
Drill Owner: John F.
Drill Runner: Wallace

DEPTH From	To	
0	5	Black soil
5	20	Brown clay (solid at 17')
20	25	Buff dolomite, gray dark-speckled dolomite 95-5, few specks marcasite, few specks green shale, trace limonite
25	35	Buff dolomite, few specks limonite
35	50	Buff dolomite
50	60	Buff dolomite, some buff clay
60	70	Buff dolomite, trace dark buff clay
70	75	Brown-buff dolomite, trace dark buff clay
75	80	Buff limonite-speckled dolomite, trace calcite
80	85	Buff-brown dolomite (calcareous), gray dolomite 2, trace brown chert, specks marcasite
85	90	Buff-brown dolomite, brown & tan chert 90-10, few specks limonite BROWN - 85
90	100	Dark brown dolomite, brown & tan chert 96-4, trace brown clay, trace limonite
100	110	Buff dolomite, brown-gray dolomite, brown chert 70-22-8, thin trace limonite
110	120	Dark brown-buff dolomite, brown chert 94-6, trace gray dolomite, trace tan chert, few specks limonite
120	130	Gray dolomite, buff dolomite 70-30, marcasite-speckled chert 4, trace brown chert, trace limonite, marcasite 1/10
130	135	Brown-gray dolomite, gray chert 96-4, buff dolomite 4, marcasite 4, limonite 2/10
135	140	Buff dolomite (coarse cuttings), gray dolomite 90-10, trace gray chert, limonite 4, trace dark gray-brown cave filling clay, few specks marcasite
140	145	Brown-gray dolomite, gray chert 97-3, trace tan chert, marcasite 1/10, trace buff dolomitic ravellings (Driller reports formation as being ribby)
145	150	Light brown dolomite, trace tan chert & trace marcasite-speckled chert, marcasite 1/10
150	160	Light brown dolomite, trace tan chert, marcasite 1/10
160	170	Brown dolomite, tan & gray chert 98-2, marcasite 2/10
170	180	Brown dolomite, tan chert 95-5, trace calcite, marcasite 2/10
180	185	Brown dolomite, trace tan chert, trace calcite, trace marcasite
185	190	Brown dolomite, gray dolomite 60-40, trace calcite, trace marcasite GRAY - 188
190	195	Gray dolomite, thin trace marcasite
195	197½	Gray dolomite, thin trace marcasite
197½	200	Brown-gray dolomite, thin trace marcasite
200	202½	Brown-gray calcareous dolomite, trace gray clay, thin trace marcasite

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Geolo[illegible] Harold W. [illegible]vis

Property [illegible]

From	To	
20[illegible]	205	[illegible]
20[illegible]	20[illegible]	[illegible]
20[illegible]	[illegible]	[illegible]
21[illegible]	[illegible]	[illegible]
212	[illegible]	[illegible]
215	[illegible]	[illegible]
220	[illegible]	[illegible]
22[illegible]	[illegible]	[illegible]
225	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
230	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
240	[illegible]	gray [illegible]

Note[illegible]

Water [illegible]

[illegible]

Geologists: Edwin J. Poehlmann
Norman Eastmoore

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: F. W. WILKINSON
Began: 9-1-52 Finished: 9-4-52
Drill Owner: The Bill Swalley Estate
Drill Runner: David Taylor

Total Depth 135.0

Water Level 60.5

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Brown-buff & gray clays
10	20	Brown & buff clays
20	25	Buff clay, some brown chert
25	30	Brown clay, brown chert, buff dolomite 70-10-10
30	40	Buff dolomite, brown & tan chert 90-10, few specks limonite
40	50	Buff dolomite, gray & tan chert 85-15, trace buff clay, few specks limonite
50	60	Buff clay & dolomite, gray & tan chert 97-3, few specks limonite
60	70	Brown-buff dolomite, gray & tan chert 97-3, trace limonite
70	80	Light brown-buff dolomite, brown & tan chert 97-3, trace limonite
80	90	Light brown dolomite, brown chert 93-7, trace limonite
90	95	Brown dolomite, gray dolomite 80-20, brown chert 1, trace limonite, few specks marcasite GRAY - 94
95	97½	Gray dolomite, brown dolomite 25, trace marcasite, trace limonite
97½	100	Gray-brown dolomite, trace marcasite
100	102½	Gray dolomite, trace marcasite
102½	105	Gray dolomite, gray dark-speckled dolomite 60-40, trace marcasite BLUE - 104.0
105	107½	Gray dark-speckled dolomite, trace marcasite
107½	110	Gray dark-speckled dolomite, trace marcasite
110	112½	Gray dark-speckled dolomite, thin trace marcasite
112½	115	Light brown & brown fossiliferous dolomitic limestone, green gray clay 60-40, marcasite 1/10 CHT - 112½
115	117½	Light brown & tan dolomitic limestone, trace marcasite
117½	120	Light brown-buff dolomitic limestone, some dark brown limy shale, trace marcasite
120	122½	Light brown dolomitic limestone, trace marcasite GRAY - 125
122½	125	Gray-brown fossiliferous dolomitic limestone, marcasite ½
125	127½	Gray clay, trace green shale, some dark brown & light brown dolomitic limestone, trace marcasite, trace phosphate GRAB - 127½
127½	130	Brown dolomitic limestone, trace calcite, trace marcasite
130	132½	Light brown limestone & brown dolomitic limestone, trace marcasite
132½	135	Gray dolomitic limestone, light brown limestone & brown dolomitic limestone 80-20, trace marcasite McGREGOR - 133

Total depth measured 135.0'

Land Description: Northwest ¼ of Southwest ¼ of Sec. 32, Twnsp 2 North, Rng 1 East

Location of Hole: 45' East and 15' South of Southwest corner of Northwest ¼ of Sec. 32

Geologist: Edwin J. Poehlmann

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 2

Property Name: FRED W. [illegible]KINSON — **Total Depth 112.5**
Began: 9-12-62 **Finished:** 9-16-62
Drill Owner: The [illegible] Swalley Estate
Drill Runners: [illegible] Taylor — **Water Level** [illegible]7.5

DEPTH From	To	DESCRIPTION
0	10	Coarse c[illegible] buff dolomite, [illegible] chert & brown clay
10	20	Buff dol[illegible] [illegible]rown & gray che[illegible] [illegible]-10
20	30	Buff dol[illegible] [illegible]an chert 9[illegible]-2, [illegible] [illegible]ecks limonite
30	40	Buff dol[illegible], [illegible]rown & tan chert [illegible], few specks limonite
40	50	Light buf[illegible]ite, brown & ta[illegible] [illegible]rt 99-1, trace limonite
50	60	Buff dolo[illegible] [illegible]rown & tan chert [illegible]-10, trace limonite
60	70	Fa[illegible] brown [illegible]ite, tan chert 9[illegible], trace limonite
70	75	Gray dolo[illegible], light brown dolomi[illegible] [illegible]-20, trace limonite & marcasite [illegible]Y - 71
75	77½	Gray dolo[illegible], few specks light br[illegible] dolomi[illegible], few specks marcasite, few [illegible]ecks blen[illegible]
77½	8[illegible]	Gray-brown [illegible] & ligh[illegible] brown [illegible]mite, few specks marcasite, spec[illegible] blende
80	82½	Gray-brown [illegible] light brown dolomite, few specks marcasite
82½	8[illegible]	Gray-brown & li[illegible]ht brown dolomite, [illegible]ew dark-speckled dolomite 80-82, few specks marcasite, [illegible]ecks blende [illegible]LOE - 84
85	8[illegible]	Gray dark-spe[illegible]ed dolomite, trace [illegible]casite, few specks [illegible] blende
87½	90	Gray dark-speckled dolomite, trace [illegible]casite
90	92½	Gray dark-speckled dolomite, brown [illegible]estone 10, trace marcasite [illegible]
92½	95	Light brown [illegible] dolomite, trace [illegible], thin trace marcasite
95	97½	Light brown [illegible] dolomite, calcite [illegible], thin trace marcasite
97½	100	Light brown [illegible] dolomite, trace [illegible] brown clay, trace calcite, thin trace marcasite
100	102½	Light brown [illegible] dolomite & light [illegible] dolomitic limestone, gray clay [illegible], thin trace marcasite [illegible]LEY - 102
102½	105	Light gray cl[illegible] [illegible] brown limes[illegible], thin trace marcasite
105	107½	Brown & light [illegible] dolomitic lim[illegible], few specks marcasite [illegible] - 105
107½	110	Light brown & [illegible] limestone & calc[illegible] limestone, trace dark brown clay [illegible] brown calcite, [illegible] specks marcasite
110	112½	Gray dolomitic [illegible] brown [illegible] limestone 5, thin trace marcasite [illegible]ROCK - 110

Total depth measured [illegible] with [illegible] tape.
Water at 47[illegible]
Land Description: [illegible] of [illegible] of [illegible] of Sec. 32, [illegible] North [illegible] East
Location of Hole: [illegible] feet [illegible] of Northwest corner of Sec. [illegible] of Sec. 32

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 3

Property Name: FRED W. WILKINSON
Began: 9-18-52 Finished: 9-18-52
Drill Owner: Swalley
Drill Runner: David Tayler

DEPTH From	To	DESCRIPTION
0	5	Black soil
5	10	Light yellow clay
10	20	Dark buff clay
20	27	Dark buff clay, light yellow chert
27	30	Buff dolomite, gray-brown chert 90-10, trace limonite
30	40	Buff dolomite, gray-brown chert 91-9, few specks limonite
40	45	Buff dolomite, gray-brown chert 85-15, few specks limonite
45	60	Coarse cuttings: Buff dolomite, gray-brown chert 92-8, specks limonite
60	70	Buff dolomite, tan chert 97-3
70	75	Buff dolomite, gray-brown & tan chert 98-2, trace limonite
75	80	Dark buff dolomite, gray-brown chert 80-20, limonite 3/10 -
80	85	Dark buff dolomite, gray-brown & tan chert 60-40, limonite 3/10, few specks galena
85	90	Buff-brown dolomite, tan & gray-brown chert 95-5, limonite 5/10
90	95	Buff-brown dolomite, gray dolomite 60-40, trace chert, limonite & marcasite 6/10 GRAY - 93
95	97½	Gray dolomite, buff-brown dolomitic ravellings 50, chert 1, limonite 3/10, trace marcasite
97½	100	Gray dolomite, buff dolomitic ravellings 15, limonite 1/10, few specks marcasite
100	102½	Gray dolomite, buff dolomitic ravellings 5, trace chert, limonite & marcasite 5/10
102½	105	Gray dolomite, trace buff ravellings, trace calcite, limonite & marcasite 4/10
105	107½	Gray dolomite, limonite 7/10, trace marcasite
107½	110	Gray dark-speckled dolomite, some buff dolomite & chert ravellings, limonite 2, marcasite 3/10 BLUE - 107½
110	112½	Gray dark-speckled dolomite, buff dolomitic ravellings 10, limonite 1, marcasite 3/10
112½	115	Gray dark-speckled dolomite, buff dolomite & chert ravellings, limonite & marcasite 3/10
115	117½	Gray dark-speckled dolomite, buff dolomite & chert ravellings, calcite 1, marcasite 4/10
117½	120	Light brown dolomitic limestone, dark brown shale 1, few specks green shale, marcasite & limonite 4/10 OIL - 117½
120	122½	Brown dolomitic limestone, brown shale 98-2, trace calcite, marcasite ½, few specks blende
122½	125	Brown dolomitic limestone, brown shaly limestone 1, marcasite 3/10, thin trace blende
125	127½	Brown dolomitic limestone, brown shale 98-2, marcasite 3/10, trace blende

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Property Name: FRED W. WILKINSON

From	To	
127½	130	Dark gray fossiliferous limestone & green shale, trace brown dolomitic limestone, marcasite 2/10 CLAY - 127½
130	132½	Light brown dolomitic limestone, dark gray fossiliferous limestone & green shale 2, marcasite 2/10, few specks blende GLASS - 130½
132½	135	Brown dolomite, marcasite 1/10, few specks blende & galena
135	137½	Dark brown dolomite, calcite 4, marcasite 3/10, few specks blende
137½	140	Brown dolomitic limestone, gray dolomitic limestone, dark brown shale 55-40-5, marcasite 3/10, a speck blende McGREGOR - 139
140	142½	Gray dolomitic limestone, marcasite 3/10, few specks blende & galena

Total depth measured 142.6' with steel tape.
Water at 71' from collar

DRILLER'S REMARKS: Firm ground in lower beds.

Location of Hole: 900' East from Drill Hole #2

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 4

Property Name: FRED W. WILKINSON
Began: 9-19-52 Finished: 9-19-52
Drill Owner: Swalley
Drill Runner: David Taylor

DEPTH From	To	DESCRIPTION
0	1½	Mine tails
1½	4½	Soil
4½	16	Brown clay
16	20	Buff limonite-speckled dolomitic limestone, brown & tan chert 94-6, limonite 1
20	25	Coarse cuttings: buff limonite-speckled dolomitic limestone, tan & brown chert & buff chert 92-8, marcasite 2, limestone 1
25	30	Dark buff dolomite, brown & tan chert 95-5, (coarse cuttings) marcasite & limonite 18
30	35	Dark buff dolomite, brown chert 70-30, trace tan chert, marcasite & limonite 15
35	40	Dark buff dolomite, brown chert 65-35, limonite & marcasite 10
40	45	Dark buff dolomite, brown, tan & buff chert 60-40, limonite & partially oxidized marcasite 30 (fairly coarse cuttings)
45	50	Buff dolomite, brown & tan chert 96-4, limonite & marcasite 15 (coarse cuttings) GRAY - 45
50	55	Buff dolomite, slight trace green shale, chert ravellings 1, limonite & marcasite 10
55	60	Brown-buff dolomite, chert ravellings 5, limonite & marcasite 12 (coarse cuttings
60	65	Extra coarse cuttings: brown dolomite, gray clay 80-20, marcasite 20, limonite 2, few coarse pieces of galena BLUE - 60
65	67½	Brown dolomite 1, few chips buff dolomite ravelling, gray clay, marcasite 60, blende 2 (?), coarse cuttings
67½	70	Brown clay & fossils, some buff dolomitic & chert ravellings, marcasite 15, blende 1 (?), trace galena OIL - 67½
70	72½	Green clay & brown clay, trace brown dolomite, trace phosphate, blende ½, galena 4/10 CLAY - 71
72½	75	Brown dolomite, buff dolomitic ravellings 20, marcasite & limonite 15, galena 5/10, few specks blende GLASS - 72½
75	77½	Brown dolomite, gray dolomitic limestone 80-20, buff dolomitic ravellings 30, coarse cuttings, marcasite & limonite 8, few specks blende & galena MaGREGOR - 77
77½	80	Buff dolomitic ravellings, gray dolomitic limestone 80-20, limonite & marcasite 5
80	82½	Gray dolomitic limestone, buff dolomitic ravellings 80-20, limonite & marcasite 5

(Continued on next page)

Property Name: FRED W. WILKINSON

From To

Total depth measured 82.5' with steel tape.
Water at 24½' from collar

Limonite and marcasite in lower sections believed to be ravellings.
Bottom of hole was soft, easy drilling.

Location of Hole: 1100' East from Drill Hole #3

Assays	ZnS	FeS_2	PbS
40-45	0.75	31.10	nil.
60-65	0.75	38.00	"
65-67½	1.85	58.90	"
67½-70	1.00	31.20	"
70-72½	1.70	18.70	"
72½-75	0.70	15.70	"

Geologist: Harold N. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 1

Property Name: FRED W. WILKINSON
Began: 2-5-53 Finished: 2-6-53
Drill Owner: Thomas
Drill Runner: Heavis

DEPTH From	To	DESCRIPTION
0	10	Black soil
10	15	Buff dolomite, gray-brown & buff chert 95-5, trace limonite, buff clay
15	20	Buff dolomite, gray-brown & buff chert 92-8, some buff clay, trace limonite
20	25	Buff dolomite, gray-brown chert 93-7, trace limonite, some buff clay
25	30	Buff dolomite, gray-brown chert 94-6, some buff clay, trace limonite
30	35	Buff dolomite, gray-brown chert 80-20, limonite 1
35	40	Buff dolomite, gray-brown & tan chert 90-10, limonite 2, trace galena
40	45	Buff dolomite, gray, gray-brown, tan & buff chert 91-9, brown-buff clay 2, limonite ½, few specks galena
45	50	Buff dolomite, gray-brown & buff chert 82-18, limonite 2/10 GRAY - 2
50	55	Various colored chert, buff dolomite 60-40, limonite 1
55	60	Various colored chert, gray dolomite 80-20, limonite & marcasite 1/10
60	62½	Gray dark-speckled dolomite, various colored chert 70-30, marcasite 3 BLUE - 60
62½	65	Gray dark-speckled dolomite, various colored chert 75-25, marcasite 2
65	67½	Various colored chert, limonite-stained clay, gray dark-speckled dolomite 70-20-10, marcasite 1, few specks blende & galena OIL - 67½
67½	70	Various colored chert, brown dolomitic limestone & brown clay 90-10, marcasite & limonite 2, blende 1/10
70	72½	Various colored chert, gray clay, brown dolomitic limestone 80-19-1, marcasite & limonite 2, blende 1/10
72½	75	Gray clay CLAY - 72
75	77½	Dark brown dolomitic limestone, buff dolomite & chert ravellings, 80-20, chocolate brown shale 1, marcasite 1, a speck blende GLASS - 75
77½	80	Brown dolomitic limestone, gray dolomitic limestone 60-40, considerable ravellings of chert & buff dolomite, marcasite 7/10, a speck blende McGREGOR - 79

To a1 depth measured 80' with steel tape.
Water at 24'
Land Description: Northeast of Southwest ¼

Location of Hole: North 55° West 100 feet from Drill Hole #4

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 6

Property Name: FRED A. WILKINSON
Began: 2-7-53 Finished: 2-10-53
Drill Owner: Thomas
Drill Runner: Reavis

Elevation 989.41

DEPTH From	To	DESCRIPTION
0	5	Ochre-brown clay, few specks chert
5	10	Dark ochre clay & dark brown clay, buff red & brown chert 5
10	15	Dark ochre clay, brown & buff chert 5
15	20	Dark ochre clay, brown & buff chert 7, few extra cuttings brown chert
20	25	Buff dolomite, brown & dark buff chert 80-20, limonite 3
25	30	Buff dolomite, gray-brown chert (coarse cuttings) 90-10, limonite 3/10
30	35	Coarse cuttings: Buff dolomite, brown & gray-brown chert 92-8, limonite 2/10
35	40	Coarse cuttings: Buff dolomite, brown & dark buff chert 96-4 limonite 1/10
40	45	Coarse cuttings: Buff dolomite, brown & gray-brown chert 97-3, trace limonite
45	50	Dark buff dolomite, brown & gray-brown chert 94-6, limonite 2/10 (some coarse cuttings dolomite)
50	55	Dark buff dolomite, brown & gray-brown & dark buff chert 92-8, limonite 10
55	60	Coarse cuttings: Dark buff chert & gray-brown chert, buff dolomite 80-20, limonite 18
60	65	Coarse cuttings: Buff dolomite, dark buff chert & gray-brown chert 50-50, limonite 12, few specks marcasite
65	70	Coarse cuttings: Buff dolomite, dark buff chert & gray-brown chert 70-30, limonite 8, few specks marcasite
70	75	Coarse cuttings: Dark buff chert & brown chert, buff dolomite, gray dolomite 80-15-5, limonite 6, marcasite 1, few specks blende GRAY - 70?
75	77½	Buff dolomite & chert ravellings, gray dolomite 95-5, limonite 20, blende 2 (?)
77½	80	Buff dolomite & chert ravellings, gray dolomite 97-3, limonite 18, blende 8/10 (?)
80	82½	Buff dolomite & chert ravellings, gray dolomite 50-50, limonite 5, marcasite 1, blende ½ (?)
82½	85	Gray dark-speckled dolomite, buff chert ravellings 90-10, marcasite 2, blende 1/10 BLUE - 82½
85	87½	Gray dark-speckled dolomite, buff dolomite & chert ravellings 65-35, marcasite & limonite 6, blende 6/10 (?)
87½	90	Buff chert & dolomitic ravellings, gray dark-speckled dolomite 80-20, limonite 10, marcasite 10, blende 3 (?)
90	92½	Buff dolomite, limonite-stained clay, gray-brown chert 65-30-5, limonite 10, marcasite 2, blende 1 (?) OIL - 90 (?)
92½	95	Buff dolomite, limonite-stained clay 70-30, limonite 4, marcasite ½, blende ½ (?)
95	97½	Buff dolomite & chert ravellings, brown dolomitic limestone 60-40, limonite & marcasite 10, blende ½ (?)

(Continued on next page)

Property Name: FRED W. WILKINSON

From	To	
97½	100	Brown dolomitic limestone, buff dolomite & chert ravellings 85-15, limonite & marcasite 8, blende ½(?), few specks galena CLAY - 100
100	102½	Gray clay, some ravellings marcasite 1, blende 4/10
102½	105	Brown dolomite, considerable ravellings from buff dolomite & chert, trace calcite, marcasite 8, blende 6/10 (?) GLASS - 102½
105	107½	Brown limestone, buff dolomite & chert ravellings 70-30, limonite & marcasite 15, blende 4 (considerable steel in sample)
107½	110	Gray dolomitic limestone, buff dolomite & chert ravellings 60-40, marcasite & limonite 4, blende 1 (considerable steel in sample) McGREGOR - 107½
110	112½	Gray dolomitic limestone, some ravellings, marcasite & limonite 5, blende 1, considerable steel in sample
112½	115	Gray dolomitic limestone, little ravellings, marcasite 2, blende 1 (considerable steel in sample)

Total depth measured 115.3 with steel tape.
Water at 49'
NOTE: Considerable ravelling in this hole. Blende mineralization difficult to estimate due to great amount of limonite. Samples contaminated from 105 to 115, driller intentionally put some pieces of an old stove in the hole to make it cut straight. 90 to 95 does not appear to be OILROCK, but it cannot be anything else.

Driller's Remarks:

0	18	Clay & gravel
18	45	Buff lime & brown flint - firm
45	50	Buff snady lime & buff clay
50	60	Brown flint & red clay--soft & cavy
60	70	Brown flint & rust--soft
70	75	Gray lime & brown flint, rust & some speck of zinc
75	82½	Gray lime, some iron & few specks zinc
82½	87½	Blue ground--firm
87½	100	Oilrock--firm
100	102½	Gray clay, soft
102½	107½	Glassrock, hard
107½	115	Trenton lime, hard

Weak water at 60, another flow at 75 (not too strong)
Small crevice at 108'
Land Description: Northeast ¼ of Southwest ¼
Location of Hole: 560' West & 250' North from Drill Hole #4

(Assay on next page)

Property Name: FRED W. WILKINSON

Hole No. 6

(Continued)

ASSAY

		ZnS	FeS_2	PbS
75	77½	2.20	26.20	nil.
77½	80	2.65	25.60	"
80	82½	1.75	12.00	"
82½	85	1.25	11.40	"
85	87½	0.90	11.40	"
87½	90	2.10	26.40	"
90	92½	3.10	45.40	"
92½	95	2.95	48.00	"
95	97½	2.05	29.00	"
97½	100	2.25	23.70	"
100	102½	1.30	14.00	"
102½	105	2.35	24.70	"
105	107½	3.85	21.30	"
107½	110	4.90	19.80	"
110	112½	2.70	18.10	"
112½	115	2.55	12.50	"

Analyzed by: Harold Erwin

March 7, 1953.

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 7

Property Name: FRED A. WILKINSON
Began: 2-18-53 Finished: 2-19-53
Drill Owner: Thomas
Drill Runner: Reavis

DEPTH From	To	DESCRIPTION
0	5	Brown clay
5	10	Brown-buff clay
10	15	Buff dolomite, tan, gray-brown & buff chert 88-12
15	20	Buff dolomite, tan, gray-brown & buff chert 90-10, few specks marcasite
20	25	Buff dolomite, tan, gray-brown & buff chert 90-10, limonite 5, marcasite 1
25	30	Buff dolomite, tan, gray-brown & buff chert 91-9, limonite 7 marcasite 2
30	35	Dark buff dolomite, gray-brown chert 95-5, limonite 3, marcasite 2
35	40	Dark buff dolomite, gray-brown & tan chert & buff chert 94-6 limonite 4, marcasite 1
40	45	Dark buff dolomite, gray-brown & tan chert 80-20, limonite 6 marcasite 1
45	50	Dark buff dolomite, gray-brown & tan chert 85-15, limonite 5 marcasite ½
50	55	Dark buff dolomite, gray-brown chert 92-8, limonite 10, marcasite ½
55	60	Dark buff dolomite, brown cave clay, gray-brown chert 60-35-5, limonite-speckled dolomite & limonite 30, marcasite 7/10
60	65	Dark buff dolomite, gray dolomite 50-50, chert ravellings 3, limonite 5, marcasite 2 GRAY - 60 ?
65	67½	Gray dolomite, buff dolomite & chert ravellings, gray clay 60-20-20, marcasite 25
67½	70	Brown gray dolomite, dark buff dolomite & chert ravellings 90-10, gray clay 5, marcasite & limonite 20
70	72½	Brown gray dolomite, dark buff dolomite & chert ravellings 60-40, gray clay 1, marcasite 45
72½	75	Gray marcasite-speckled dolomite & gray clay, buff dolomite & chert ravellings 90-10, marcasite 30 BLUE - 72½ ?
75	77½	Brown dolomite, buff dolomite ravellings 50-50, few specks gray dark-speckled dolomite, marcasite 35, few specks galena OILROCK - 75 ?
77½	80	Gray-green clay, few cuttings brown dolomite, buff dolomite & chert ravellings 20, few specks phosphate, marcasite 5, few coarse cuttings galena CLAY - 78?
80	82½	Gray-green clay, dark buff dolomitic ravellings 25, gray-brown dolomite 5, marcasite 2, few coarse cuttings galena
82½	85	Brown dolomite, gray-green clay, dark buff dolomitic ravellings 40-30-30, marcasite 40, few specks galena GLASS - 83 ?

(Continued on next page)

Geologist: Harold A. Davis

HOLE No. 7
Continued

Property Name: FRED A. WILKINSON

From	To	
85	87½	Brown dolomite, dark buff dolomite & chert ravellings 60-40, marcasite 80
87½	90	Gray dolomitic limestone, considerable ravellings from overlying beds, marcasite 20 McGREGOR - 87½

Total depth measured 90.6' with steel tape.
Water 89½'

Very soft formations.
Assays for iron

Land Description: Northeast ¼ of Southwest ¼

Location of Hole: 100' East from Drill Hole #4

Geologist: H. W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 8

Property Name: FRED W. WILKINSON
Began: 4-4-53 Finished: 4-6-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 1004.18

DEPTH From	To	DESCRIPTION
0	22	Dark ochre clay & chert
22	30	Buff dolomite, gray chert 90-10, ochre clay sloughing in, limonite 2/10, few specks marcasite
30	35	Buff dolomite, gray chert 93-7, ochre clay sloughing in, limonite 1/10
35	40	Buff dolomite, gray chert 96-4, ochre clay sloughing in, trace limonite
40	45	Buff dolomite, gray chert 97-3, ochre clay sloughing in, trace limonite
45	50	Light buff dolomite, few specks light brown chert, dark limonite-stained dolomite 5
50	55	Light buff dolomite, trace gray-brown chert, trace limonite
55	60	Pale buff dolomite, gray chert 99-1, few specks limonite
60	65	Pale buff dolomite, gray-brown chert 95-5
65	70	Coarse cuttings: Pale buff dolomite, gray chert 70-30, limonite ½
70	75	Coarse cuttings: Pale buff dolomite, gray chert 95-5, limonite 4/10
75	80	Pale buff dolomite, tan & gray-brown chert 91-9, limonite 3/10
80	85	Pale gray-buff dolomite, tan & gray-brown chert 98-2, some clay sloughing in, limonite 1/10
85	90	Brown-buff dolomite, gray dolomite 60-40, limonite 1/10 GRAY - 88
90	92½	Gray dolomite, buff dolomite & gray chert ravellings 25, trace limonite & marcasite
92½	95	Gray dolomite, mostly buff dolomitic ravellings & some chert ravellings, trace limonite & marcasite BLUE - 95
95	97½	Gray dark-speckled dolomite, buff dolomitic ravellings 25, trace limonite & marcasite
97½	100	Gray dark-speckled dolomite, buff dolomitic ravellings 15, trace limonite & marcasite
100	102½	Gray dark-speckled dolomite, buff dolomitic ravellings 5, marcasite 1/10, trace limonite
102½	105	Dark gray dark-speckled dolomite, buff dolomitic ravellings 2, trace marcasite
105	107½	Brown dolomitic limestone, gray dark-speckled dolomite 60-10, marcasite 2/10 all ~~GRAY~~ - 105.2
107½	110	Brown dolomitic limestone, trace calcite, marcasite 1/10
110	115	Brown dolomitic limestone, few fossils, marcasite & limonite 1/10, few specks galena
115	117½	Brown dolomitic limestone & brown-gray dark-speckled fossiliferous dolomitic limestone, trace marcasite
117½	120	Gray dark-speckled dolomitic limestone, light green clay 80-20, few specks marcasite CLAYBED - 119.5

(Continued on next page)

Geologist: H. W. Davis

HOLE NO. 8

Property Name: FRED W. WILKINSON

From	To	
120	122½	Coarse cuttings: Brown dolomite, trace calcite, marcasite 1/10 (1½' of Claybed in this cut per driller)
122½	125	Coarse cuttings: Brown dolomite, few specks calcite, marcasite 1/10 GLASS - 121½
125	127½	Dark brown dolomite, gray dolomitic limestone (coarse cuttings) 80-20, chocolate brown shale 1, marcasite 8 McGREGOR - 127.0

Total depth measured 128.0' with steel tape.
Water at 63'

Driller's remarks:
Loose ground at 65-73
Hole caving from "DRAB" while cutting the "GRAY" & "BLUE"

Land Description: Northeast ¼ of Southwest ¼

Location of Hole: 250' West from a point South 25° East 430 feet from Drill Hole #6

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 9

Property Name: FRED W. WILKINSON
Began: 4-6-53 Finished: 4-7-53
Drill Owner: John. F. Robinson
Drill Runner: Lloyd Brown Collar Elev. 994.25

DEPTH From	To	DESCRIPTION
0	10	Dark buffish-brown clay
10	15	Dark buff clay, few coarse cuttings of gray-brown chert
15	20	buff clay, buff dolomite, gray-brown chert 80-35-5
20	30	Coarse cuttings: Buff dolomite, gray-brown chert 97-3
30	40	Buff dolomite, gray-brown chert 95-5
40	50	Buff dolomite, gray-brown chert 96-4
50	60	Dark buff dolomite, brown & light brown chert 82-18
60	65	Dark buff dolomite, brown & light brown chert 93-7
65	70	Dark buff dolomite, light brown chert 99-1
70	75	Buff dolomite, gray dolomite 60-40 GRAY - 73
75	77½	Gray dolomite, buff dolomite 95-5, a speck marcasite
77½	80	Brown-gray dolomite, few specks marcasite
80	82½	Brown-gray dolomite, (some buff dolomite & chert ravellings) marcasite 1/10
82½	85	Brown-gray dolomite, (some buff dolomite & chert ravellings) marcasite 1/10
85	87½	Gray dark-speckled dolomite, brown gray dolomite 90-10, trace green shale, trace marcasite BLUE - 85.3
87½	90	Gray dark-speckled dolomite (some ravellings), trace marcasite
90	92½	Gray dark-speckled dolomite (some ravellings), trace marcasite
92½	95	Brown dolomitic limestone, gray dark-speckled dolomite 90-10, few specks marcasite OILROCK - 92.8
95	97½	Light brown dolomitic limestone, dark brown shale 99-1, trace calcite, marcasite 1/10
97½	100	Brown dolomitic limestone, chocolate brown shale 95-5, marcasite 1/10, few specks blende
100	102½	Light brown limestone, dark brown shaly limestone 95-5, trace marcasite
102½	105	Brown limestone, dark brown shaly limestone 90-10, trace marcasite
105	107½	Gray dark-speckled dolomitic limestone, green clay & shale 3 thin trace marcasite
107½	110	Brown-gray fossiliferous limestone, gray clay 80-20, marcasite 1/10 CLAYBED - 107.4
110	112½	Brown dolomitic limestone, trace chocolate brown shale, trace marcasite GLASS - 110
112½	115	Brown dolomitic limestone, calcite 3, marcasite 3/10, few specks galena McGREGOR - 112.3
115	117½	Brown dolomitic limestone, gray dolomite limestone 90-10, chocolate brown shale 2, trace calcite, marcasite 1/10

Total depth measured 117.7' with steel tape.
Water at 57'.
Land Description: Northeast ¼ of Southwest ¼
Location of Hole: South 25° East 430 feet from Drill Hole #6

Geologist: Harold W. Davis

DRILL RECORD
The Eagle-Picher Company

HOLE NO. 10

Property Name: FRED W. WILKINSON
Began: 4-18-53 Finished: 4-18-53
Drill Owner: John F. Robinson
Drill Runner: L. J. Brown Collar Elev. 963.46

DEPTH From	To	DESCRIPTION
0	5	Soil
5	10	Buff dolomite, gray-brown chert, dark buff clay 80-15-5, trace limonite
10	15	Coarse cuttings: Dark buff dolomite, gray-brown chert 82-18, trace limonite
15	20	Dark buff dolomite, light gray-brown chert, dark buff clay 70-15-15, trace limonite
20	25	Coarse cuttings: Dark buff dolomite, gray-brown chert 80-20
25	30	Coarse cuttings: Dark buff dolomite, gray-brown chert 80-20
30	35	Coarse cuttings: Dark buff dolomite, gray-brown chert 85-15
35	40	Coarse cuttings: Dark buff dolomite, buff clay, gray-brown chert 80-18-2
40	45	Coarse cuttings: Dark buff dolomite, gray-brown chert 99-1, a little dark buff clay
45	50	Medium cuttings: Dark buff dolomite, gray-brown chert 97-3, trace dark buff clay, trace gray clay
50	55	Coarse cuttings & few extra coarse cuttings: Dark buff dolomite, buff clay 70-30, dark gray-brown clay 2
55	60	Buff clay & dark brown clay, buff dolomite 97-3 GRAY - 53?
60	65	Buff clay, few coarse cuttings, buff dolomite
65	67½	Buff clay & brown clay, buff dolomite 50-50, few extra coarse cuttings oxidized "Gray" dolomite with coating of green shale on one side
67½	70	Dark buff dolomite, buff clay 60-40, few coarse cuttings gray dark-speckled dolomite BLUE - 67½ (?)
70	72½	Buff clay & gray-brown clay, dark buff dolomite 60-40, marcasite ½, few specks blende OIL ROCK 72½?
72½	75	Brown clay & few coarse cuttings brown dolomite, marcasite 1/10, few rather coarse crystals of blende
75	77½	Coarse cuttings: Brown dolomitic limestone (punky), brown & gray-brown clay 80-20, a speck green clay, marcasite 7/10, some fossils, few specks blende
77½	80	Brown shaly limestone (coarse chips), green clay 80-20, marcasite 1/10, few phosphate nodules, few specks blende CLAYBED - 79½ ?

(Continued on next page)

Geologist: Harold A. Davis

Hole No. 10
(Continued

Property Name: FRAL W. WILKINSON

From	To	
80	82½	Brown clay, brown dolomitic limestone 50-50, few coarse cuttings gray dolomite, few fossils, some brown shale, marcasite 3/10, few specks blende
82½	85	Extra coarse cuttings: Buff dolomitic ravellings (couldn't get bailer to botton--Hole collapsed.)

GLASSROCK - 81?

McCORMICK: Not certain that formation was cut.

Impossible to measure the depth.
Water at 35'

A soft muddy hole: None of the "Tops" are reliable.

Location of Hole: 125' North from #10 on
F.W. & J. Frank Wilkinson

Brace[illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

500

COPY

Sept 27 1954

Mr. Corbin Shouse
The Eagle-Picher Company
Mining and Smelting Division
First National Bank Building
Miami, Oklahoma

Re: Docket No. DMEA-2399 (Lead-Zinc)
The Eagle-Picher Company
Calvert-Ralph Orebody
Lafayette County, Wisconsin
Contract No. Idm-E339

Dear Mr. Shouse:

I have your letter of September 17 regarding the cited ore body. It will not be necessary for you to make a report to Mr. Needham every six months as long as the property is idle. However, if at any time you might put the property into production, Mr. Needham should then be so advised.

Sincerely yours,

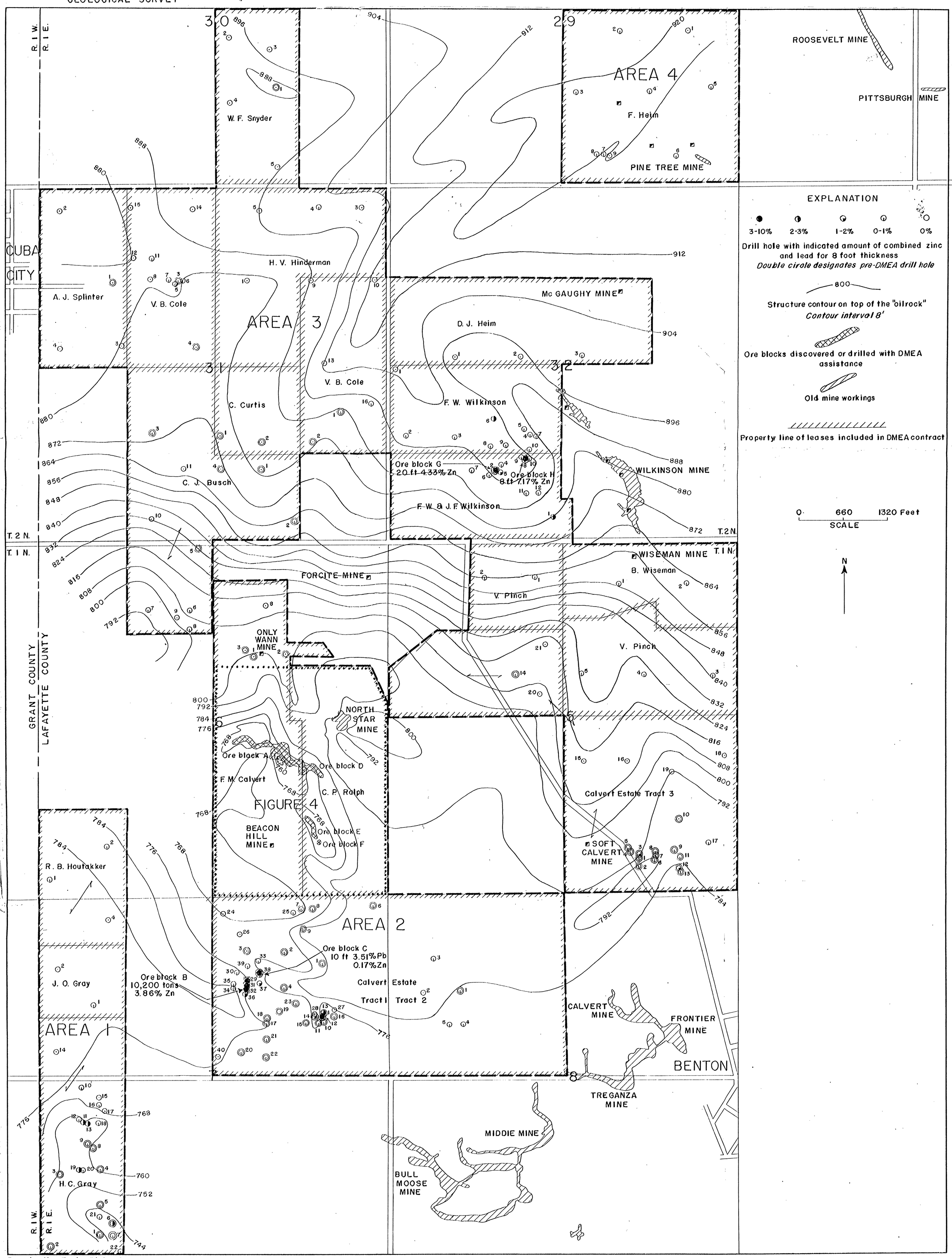
/s/ Frank E. Johnson

Acting Administrator

WRGriswold:er 9/24/54

Copy to: Docket
Operating Committee
Admr. R. File
Base Metals Division
Region V (2)
Mr. Kiilsgaard, Rm 5227
Mr. Bishop, USBM
Chron.

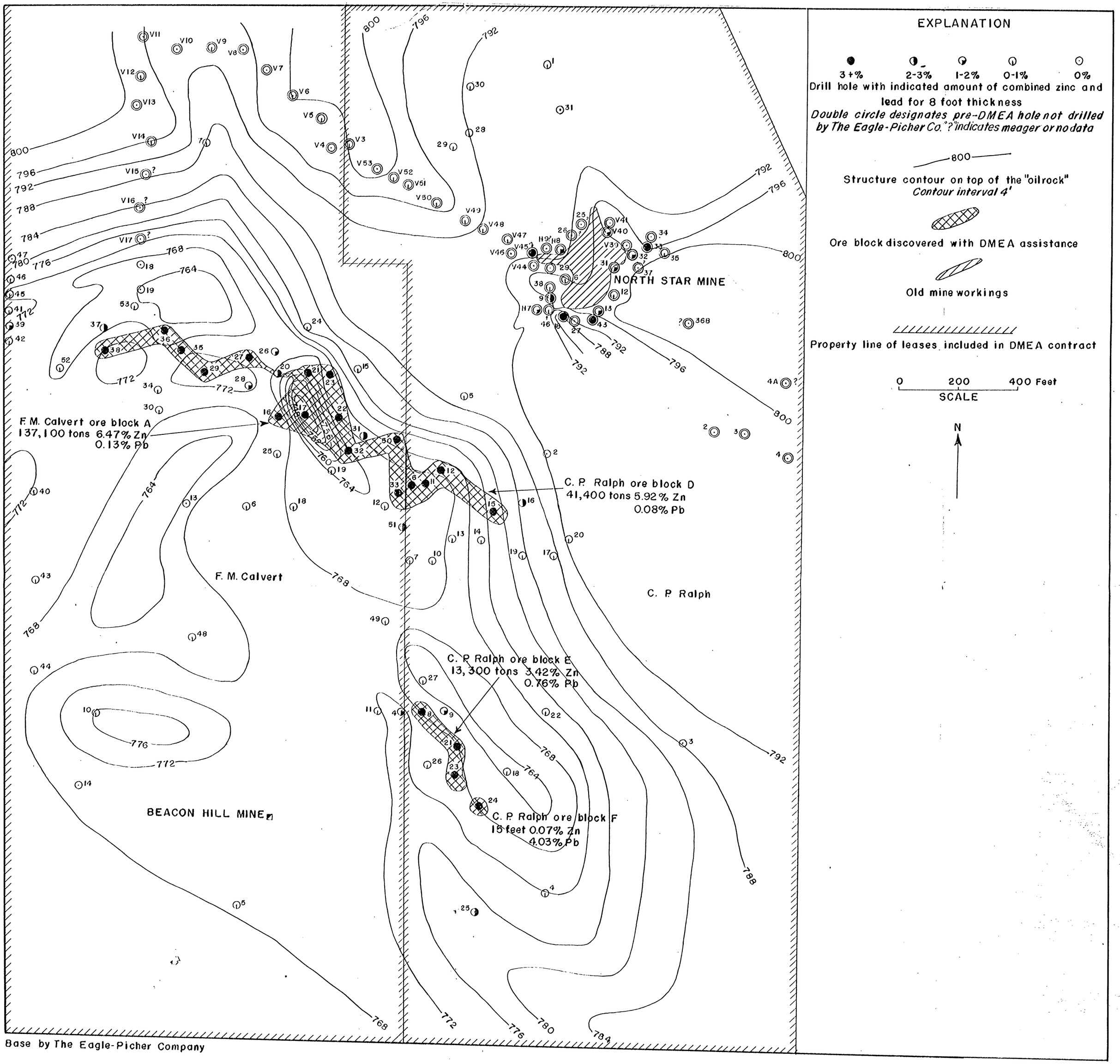
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Base by the Eagle-Picher Co.

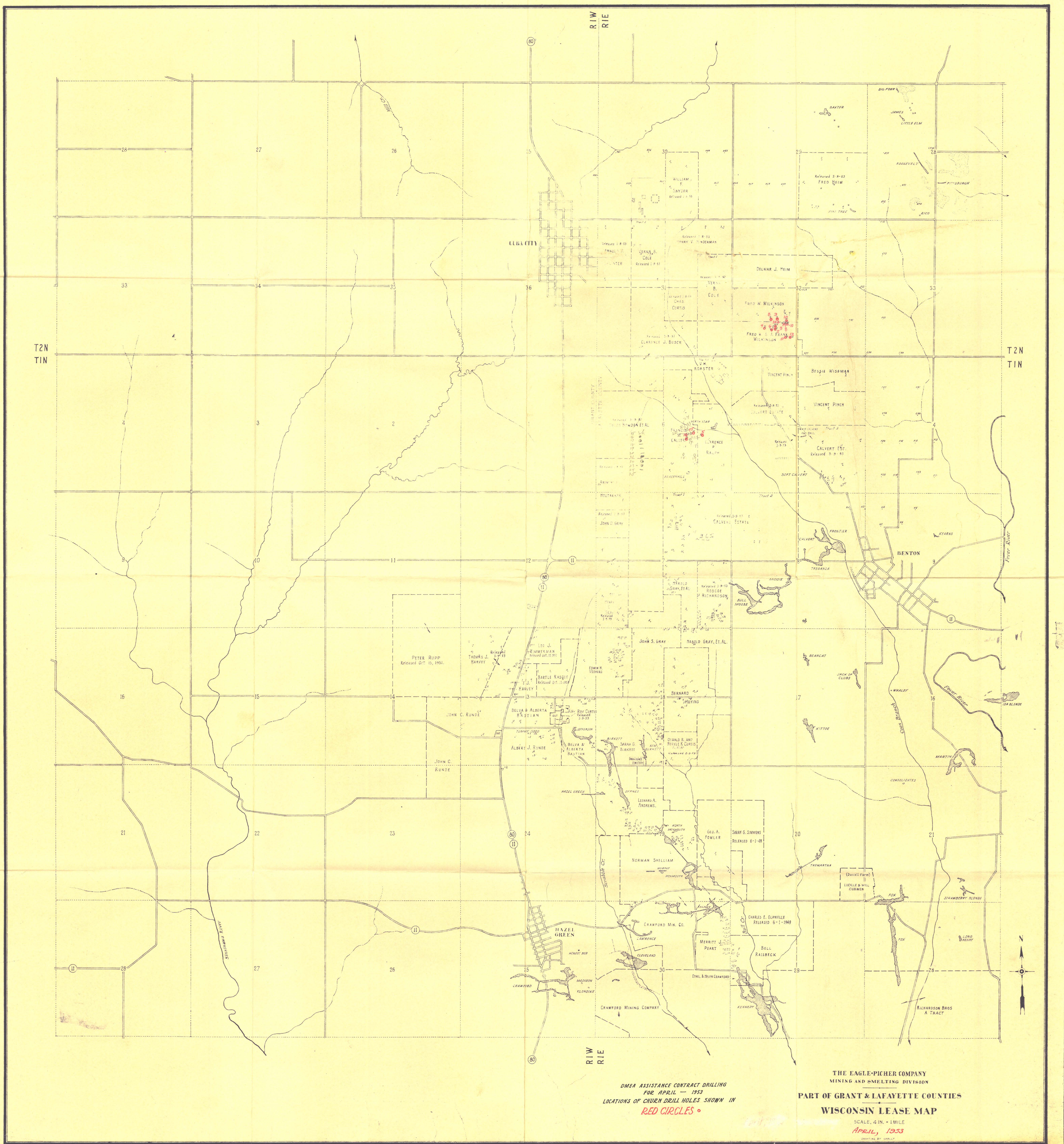
FIGURE 3. Map of part of Lafayette County, Wisconsin, showing the areas drilled by The Eagle-Picher Company under DMEA contract No-Idm-E339

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Base by The Eagle-Picher Company

FIGURE 4. Map showing the C. P. Ralph property and part of the F. M. Calvert property, Lafayette County, Wisconsin, leased by The Eagle-Picher Company.



DMEA ASSISTANCE CONTRACT DRILLING
FOR APRIL — 1953
LOCATIONS OF CHURN DRILL HOLES SHOWN IN
RED CIRCLES ○

THE EAGLE-PICHER COMPANY
MINING AND SMELTING DIVISION

PART OF GRANT & LAFAYETTE COUNTIES

WISCONSIN LEASE MAP

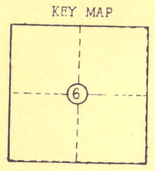
SCALE, 4 IN. = 1 MILE

APRIL, 1953

DRAFTING BY SHELLY

FILE IN WISCONSIN GENERAL POCKET

KEY MAP



TIN RIE LAFAYETTE COUNTY, WISCONSIN.

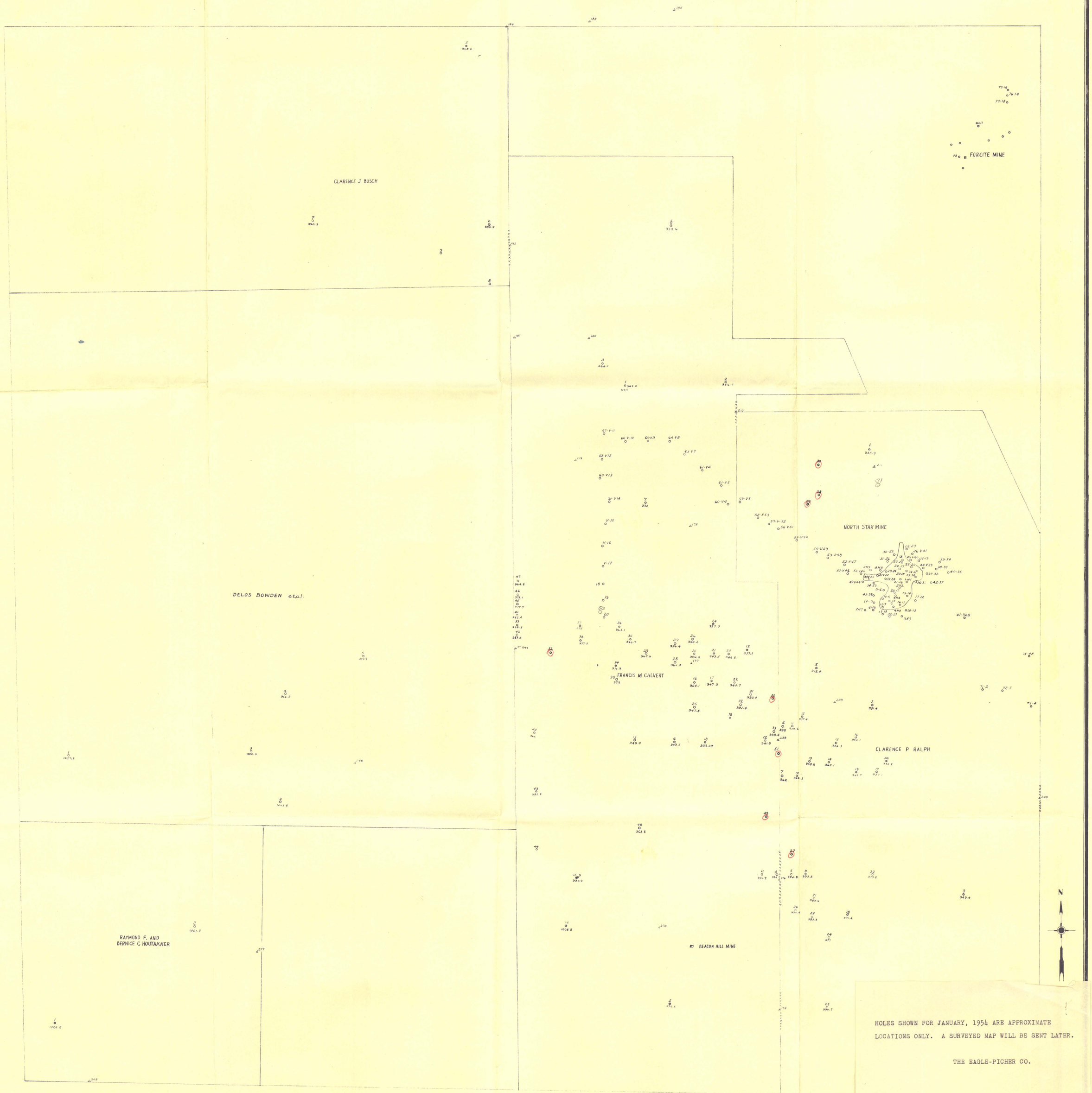
THE EAGLE-PICHER COMPANY
MINING AND SMELTING DIVISION
GEOLOGICAL DEPARTMENT

SCALE 1" = 200' INDEX 3IN 48E

USGS

DMEA Drilling for Feb., 1954.

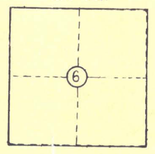
Final



HOLES SHOWN FOR JANUARY, 1954 ARE APPROXIMATE LOCATIONS ONLY. A SURVEYED MAP WILL BE SENT LATER.

THE EAGLE-PICHER CO.

KEY MAP



TIN RIE LAFAYETTE COUNTY, WISCONSIN.

THE EAGLE-PICHER COMPANY
MINING AND SMELTING DIVISION
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SCALE 1"=200' INDEX 3 IN 48E

MAP SUBJECT TO REVISION
DATE 2/15/54

DMEA Drilling for Jan., 1954.

File Jan 54